DOCUMENT RESUME

ED 091 818 EA 006 172

AUTHOR	Brownfield, Dana; And Others
TITLE	Moving Toward A More Open Education. Oregon ASCD Curriculum Bulletin, Vol. 28, No. 323.
INSTITUTION	Oregon Association for Supervision and Curriculum Development, Salem.
PUB DATE	May 74
NOTE	76p.
AVAILABLE FROM	Oregon Association for Supervision and Curriculum Development, P. O. Box 421, Salem, Oregon 97308 ($2.50)
EDRS PRICE	MF-$0.75 HC-$4.20 PLUS POSTAGE
DESCRIPTORS	Contracts; *Individual Differences; *Individualized Programs; Learning Motivation; *Learning Theories; *Open Education; Recordkeeping; Student Participation; *Student Responsibility; Students

ABSTRACT

Supporters of the open approach to education are committed to the beliefs that children learn in their own unique styles, at varying rates, and best when they are actively involved in the education process. In addition, supporters of this concept are convinced that children can be trusted to set goals, evaluate performance and progress, make decisions, and display self-responsibility. This paper summarizes and organizes the experiences and thoughts of one group of teachers who have made some progress in the movement toward what has come to be called open education. Subjects covered include student responsibility, student contracts, evaluations, learning packets, room management, and individualizing instruction. (Author/JF)

PRICE LIST — SUPPLEMENTARY PACKAGES

Pkg. Language Arts

_____	310 Remedial Reading, Case Studies	$1.50
_____	312 An Inventory of Reading Skills	1.50
_____	316 Annot. Biblio Sec. Sch. Mtrls. Remediation of Read.	2.00
_____	318 Writing Is the Funnest Thing, Creative Writing	2.00
_____	260 Chewing Mettle, Stl Speech Therapy	.50
_____	290 Free Association Word List	.75
_____	295 Oregon's Literature, Music, Art	.50

$5.50

Pkg. Elementary Education

_____	252 Masking's Many Calendars	$ .75
_____	279 Inquiry and Discovery in the Elementary School	.50
_____	280 Education of Educable MR Students, Lit. Review	1.25
_____	281 How People of the West Indies Participate in the World Cult.	1.25
_____	290 A Free Association Word List for the Willamette Valley, Or.	.75
_____	304 Education and Your Child	.50
_____	310 Remedial Reading, Case Studies	1.50
_____	312 An Inventory of Reading Skills	1.50
_____	318 Writing Is the Funnest Thing	.50

$5.50

Pkg. Secondary Education

_____	274 The Oregon Six-Year Secondary School	$ .75
_____	281 Independent Study in Secondary Schools	.50
_____	283 Study of Balance in Music Classes in Oregon High Schools	.50
_____	291 Evaluation — Accreditation of Secondary Schools	2.50
_____	315 Student Unrest in the HS: Guide for Administrators	2.00
_____	316 Annot. Biblio. Sec. Sch. Mtrls. Remediation of Read.	2.00
_____	319 The Open School, Roosevelt JR. H.S., Eugene, OR	.50

$5.50

Please print the address label below

Oregon ASCD Publications
PO Box 421, Salem, Oregon 97308

Date _____

Please send me the following. I enclose $_____

_____	Pkg. I: Prior 1972, in-print issues at $15.00	$_____
_____	Pkg. I-A: Disadvantaged and Special Education at $6.00	_____
_____	Pkg. I-B: Improvement of Instruction at $8.00	_____
_____	Pkg. I-C: Administrative Interests at $3.50	_____
_____	Pkg. II: 1972 issues, at $5.00	_____
_____	Pkg. III: 1973 issues, at $5.00	_____
_____	Pkg. IV: 1974 subscription, at $5.00	_____
_____	Grand Package: I, II, III, IV above at $25.00	_____
_____	Pkg. Language Arts at $5.50	_____
_____	Pkg. Elementary Education at $5.50	_____
_____	Pkg. Secondary Education at $5.50	_____
_____	Pkg. Z: Your choice, List price, less one-third, $5.00 min.	_____
	TOTAL ENCLOSED	_____

Mail to:

Name _____

Institution _____

Street Address _____

City, State, Zip _____ (include zip)

NOTE: BULLETINS NUMBERED BELOW ARE NOW OUT OF PRINT. ORDER OF FROM LISTS ON INSIDE BACK COVER

PAYMENT MUST ACCOMPANY ORDER

MOVING TOWARD MORE OPEN EDUCATION

Dana Brownfield
Mary Kohl
Jerry Wilkins

TOWARD MORE OPEN EDUCATION

Dana Brownfield, Mary Kohl, Jerry Wilkens

TABLE OF CONTENTS

CHARTS AND ILLUSTRATIONS

AN ENVIRONMENT FOR SELF-RESPONSIBILITY

What is the optimum environment for learning? All teachers have, at one time or another, realized that there must be more effective and efficient avenues to successful learning than the traditional, self-contained classroom arrangement provides. We have made tentative, possibly unsystematic, attempts within the realm of our own creativity and resources to find approaches more conducive to learning. The intent of this project is to summarize and organize the experiences and thoughts of one group of teachers who have made some progress in the movement towards what has come to be called open education.

Supporters of the open approach to education are committed to the beliefs that children learn in their own unique styles, children learn at varying rates, and children learn best when they are actively involved. They also are convinced that children can be trusted to be able to set goals, evaluate performance and progress, make decisions, and display self-responsibility.

The popular conception of the open classroom is a situation in which the child is placed in a rich environment where, through his own natural curiosity, he will select the learning experiences that meet his needs. A move in the direction of the open classroom may necessitate a modification of the teacher's philosophy as well as an adjustment period for children who have been accustomed to a more traditional educational classroom. In order to grow in self-direction and responsibility, the child needs some guidelines and a structured framework within which to develop.

As every child has a unique way of learning, so does each teacher have an individual style of teaching. A traditional classroom that is functioning effectively is preferable to a poorly-organized attempt at an open classroom. A teacher who is interested in moving in the direction of open education, will need to carefully consider some assumptions basic to the open concept approach to education.

Assumptions About Learning and Knowledge (1)

1. Confidence in self is highly related to capacity for learning and for making important choices affecting one's learning.

2. Active exploration in a rich environment, offering a wide array of manipulative materials, will facilitate children's learning.

3. Children have both the competence and the right to make significant decisions concerning their own learning.

4. Children will be likely to learn if they are given considerable choice in the selection of the materials they wish to work with and in the choice of questions they wish to pursue with respect to those materials.

5. Given the opportunity, children will choose to engage in activities which will be of high interest to them.

6. When two or more children are interested in exploring the same problem or the same materials, they will often choose to collaborate in some way.

7. Concept formation proceeds very slowly.

8. Children learn and develop intellectually not only at their own rate but in their own style.

9. Children pass through similar stages of intellectual development, each in his own rate and in his own time.

10. Intellectual growth and development take place through a sequence of concrete experiences followed by abstractions.

11. The preferred source of verification for a child's solution to a problem comes through the materials with which he is working.

12. Errors are necessarily a part of the learning process; they are to be expected and even desired, for they contain information essential for further learning.

13. Those qualities of a person's learning which can be carefully measured are not necessarily the most important.

14. The best way of evaluating the effect of the school experience on the child is to observe him over a long period of time.

15. The quality of being is more important than the quality of knowing; knowledge is a means of education, not its end. The final test of an education is what a man *is, not what he knows.*

16. Knowledge is a function of one's personal integration of experience and therefore does not fall into neatly separate categories of "disciplines".

17. The structure of knowledge is personal and

(1) "So You Want To Change To An Open Classroom", Roland S. Barth, Phi Delta Kappan, Oct. 1971.

idiosyncratic; it is a function of the synthesis of each individual's experience with the world.

18. Little or no knowledge exists which it is essential for everyone to acquire.

A teacher who is generally in agreement with these basic assumptions and is willing to devote considerable effort and energy to a movement into this program should be able to anticipate success in his/her efforts.

When two or more children are interested in exploring the same problem they will often choose to collaborate.

GOALS, CONTRACTS, AND EVALUATIONS

Student Responsibility

When educators speak of goals, they usually think of those rather broad, general outcomes that teachers expect from their students after they have completed a unit of study or a year in the class. This expectation is reasonable in a more open classroom also. The crucial difference is that, in the individualized approach, students play a key part in setting or helping to set their own goals to the extent that they are able.

Some educational leaders would go so far as to say that students must set **all** their own goals whether they are learning to read or choosing a free-time activity. The authors of this Bulletin assume that, generally speaking, the teacher will set the instructional goals, with students assuming part of this role when students demonstrate they are capable. The student's major task will be setting personal goals centered on quantity and quality of work, but his role will change as he gains experience and responsibility. There are three areas of responsibility in goal-setting that both teacher and students must understand: 1) the student has the responsibility of setting some goals, 2) he has a voice in setting other goals, and 3) the teacher sets other goals but the student is informed of the rationale behind these goals.

There are certainly no hard and fast rules about which specific goals pupils should be setting. A teacher will be dealing with individuals, and the goal-setting progress of individuals will vary just as progress in other learning activities vary. Some students will probably progress to the point where they can actually set some of their instructional goals. Other students perhaps will not even be able to assume responsibility for setting personal work goals. The point is that the system is set up so that students can take over goal-setting roles when they are ready.

Launching the Program

As in all other areas of the program, time spent initially launching students into the unfamiliar role of goal-setting is time well-spent. They must be convinced that their judgment is important and respected. It is important also to take one step at a time, gradually giving students more and more of the responsibility as they are ready.

Work goals are perhaps the easiest with which to start. Students have always ultimately controlled the amount and quality of work they have turned out, although the teacher has probably set the goals. Students can realistically set their own work goals, and they are generally fairly well committed to them.

Class meetings provide a good vehicle to start the class thinking about setting their own goals. One way of getting started is to ask the class to comment about the teacher's standards: Does he expect too much? Not enough? Does he give the class enough time to complete assignments? Is too little time provided? Suggest that the class set up its own standard. Begin with one. If forty-five minutes is provided for math, how much work can reasonably be accomplished within that time?

Teachers who involve students in goal setting will discover that no one standard will fit all students. Pursue this point with them. A minimum class standard may be set through cooperative effort. At least in the beginning students seem to be more comfortable if they have a framework within which to work. Teachers who have tried this strategy report that seldom do students set standards too high or too low. Should goals turn out to be unrealistic, they can be adjusted at the next class meeting; however, once class standards that are agreeable to the class have been set, students need to be given the opportunity to set individual goals. Time will need to be set aside each day for each student to look over his work and make a commitment (or goal) as to how much he can complete during the period. Evaluation of how well each student is meeting his goals and how realistic his goals are will be discussed under the heading of "Evaluations" and "Contracts".

Weekly Planning

Once students are well on their way to thoughtfully judging the work, their capabilities, etc., goal-setting can be projected on a weekly basis. This is a major step. It is difficult to set long-range goals and meet them; however, students will have had several weeks of daily assessing their capabilities and should have a good understanding that a certain amount of work will need to be completed daily in order to meet the week's commitment. If someone in the class is having difficulty pacing himself, there is nothing wrong with setting goals on a daily basis that will culminate in the work being completed at the end of the week.

By setting goals for one subject on a weekly basis, some students will find that they like to complete their week's work during the first couple of days by putting forth extra effort. What do they do during the rest of the week? This situation creates the opportunity for the teacher to suggest it is time to set goals in other subject areas on an individualized basis.

Again, class meetings will bring out concerns and alternatives. Individual students will need more time in some subject areas than others. Some will question whether the goals originally set are reasonable. Others may suggest enrichment activities, etc.

Freedom to Plan

At this stage of the task, real problems can develop if students or teacher hold a certain work period sacrosanct. Suddenly there may be students with time on their hands during what has customarily been math period for example. The natural tendency is to say, "If you could finish this much in two days, you should be able to finish twice as much in a week. Set your goals higher." This may be a reasonable alternative; however, we have given students the opportunity to set their own goals. If goals are realistic in the first place, a student should not be penalized for completing them **early!**

On the other hand, if students are having a great deal of free time, the teacher will need to help the student assess his goals. This is best handled in a conference situation. If a student is incapable of assuming this responsibility, the teacher may elect to take over this role for a time or take him back to a daily basis.

For some units (a social studies project, for instance) the teacher may find a need to set longer range goals of three or four weeks. He has to be careful about placing the entire burden on the student. Even if the class has had several month's experience of pacing themselves, the teacher will probably find it difficult for them to project for longer than a week. The task can be managed if students understand that the long-range goals can be broken into weekly and daily chunks.

Standards of Accuracy

So far we have talked only about students setting goals to accomplish a certain amount of work in a certain amount of time. Another area in which students are capable of setting their own goals is in the area of accuracy. Obviously, there are some situations in which the teacher must set minimum standards of accuracy a student must achieve before tackling the next step.

A class meeting, however, will probably reveal that students' standards of accuracy are as high or higher than those of the teacher. Whether minimum standards are teacher or class set, individuals can still set their own standards within the acceptable range. Goals now include not only how **much** students will complete but also how **accurate** the work must be.

A natural extension of the plan can include concerns about neatness, form, completeness, etc. Again, a teacher may want to start with class standards of some type and have students set their goals using these as a guide.

Instructional Goals

Still another step in developing student responsibility develops when students become involved in actually setting the goals for instruction. Elaboration will not be given here, but the Taba approach to social studies is an example of students having some say in the instructional goals that are established before a unit is begun. Once students have begun to set their own goals, some type of recording system(s) is needed to keep track of what the goals are and whether they have been met. This system will be referred to as "contracts".

Contracts

Contracts take many forms. All, however, essentially provide a place for the student to list his goals for the period, day, week, or month and a way to record whether or not the goals have been met. Experimentation with many types of forms will enable the teacher to decide which is the most convenient and useable for the situation.

Since most teachers start on a daily or a one-period basis, the contracts should be limited to this period of time. Rather than each child having five contracts every week to keep track of and the teacher to file, the teacher might like to have each child keep a folder for a one-week period with space for planning each day. An actual schedule of the class day seems to help the students visualize time periods more accurately at this point. A weekly schedule might look like the one on the following page.

At the beginning of each day, each student lists specifically what he plans to accomplish that day. At the

SAMPLE OF A WEEKLY CONTRACT

Name _____

Week of _____

WEEKLY SCHEDULE

9:05-10:37	11-11:45	11:45 11:55	1:00 1:15	1:15-2:20	2:20-3:10 Rhythms	3:15-3:25 Evaluations / Room Clean-up
LANGUAGE ARTS	11-11:45	Current Events	Read to Class	1:15-2:20	2:20-2:30 Exercise / 2:45-3:15 Music	
	11-11:45			1:45-2:20 Library	2:20-3:10 P.E. / 2:20-2:30 Exercise	
	11-11:45			1:15-2:20	2:30-3:15	
	11-11:45			1:25-1:55 Music / 1:55-2:20	2:20-3:10 P.E.	

WEEKLY RECORD OF WORK COMPLETED

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
Math					
Social Studies					
Science/Health					
Art					
Penmanship					
Interest Area					

Your Comments .....

.....

Teacher's Comments .....

SAMPLE OF THREE-WEEK LEARNING PACKET AND ATTACHED CONTRACT

LANGUAGE ARTS — FIRST QUARTER — SPEECH

WEEKS 5-6-7 NAME _____

CONTENT	PROJECTS	
	MINIMUM	*PREMIUM*
A. Organizing your speech.	1. Make an outline for a ½ minute speech. 2. Present speech explaining how to do (or make) something. 3. Analyze the org. of several famous speeches.	1. Listen to a speech on T.V. or radio and develop an outline of it. 2. Prepare a large chart showing an outline to follow in preparing a talk. 3. Do some research on a famous speaker and present it to the class, either in the form of a written report or a talk.
B. Developing strong and colorful vocabulary.	1. Extract words that give clear mental images from printed speeches of well-known people. 2. Develop an individual list of strong nouns and verbs. 3. Rewrite a printed story with better nouns and verbs.	1. Write two stories, one using abstract terms, the other using concrete words. 2. Develop a chart showing (as many as possible) strong words that could be substituted for a weak one.
C. Introductions, interviews, announcements, telephone conversation.	1. Compile a list of "small talk" topics used during a day. 2. With a friend, develop a conversation to present to the class. 3. Write a story involving an introduction and a good-bye. 4. Develop a repertoire of telephone techniques with a friend. Present it to the class, orally or visually. 5. Develop a framework for an interview. 6. Make a list of questions you might ask of different people. 7. Compare an announcement to the first paragraph of a news story.	1. Prepare a list of possible conversational topics. 2. Dramatize some telephone do's and don'ts for the class. 3. Interview a neighbor with a special interest or background. 4. Present an announcement to the class.

SAMPLE (Cont.)

LANGUAGE ARTS — FIRST QUARTER — SPEECH (Cont.)

OBJECTIVES: Good organization and well-developed vocabulary are necessary in all kinds of speech activities. As we gain experience in oral expression, we should:

1. Be able to organize in outline form material to be presented in a speech.
2. Be able to identify the key points in a speech listened to or read.
3. Be able to use, in writing and speaking, concrete nouns and verbs.
4. Be able to make an introduction correctly.
5. Be able to use the telephone effectively.
6. Be able to conduct an interview, gathering the necessary information, as well as following the standards of courtesy set up by the class.

PERSONAL CRITERIA: (What I want to accomplish)	**PERSONAL EVALUATION:** (Did I achieve my goals?)

end of each day, he records specifically (page number, etc.) what he actually completed and files his completed work in his folder along with his records. The teacher will probably want to collect the folders daily until the class is thoroughly familiar with the procedures and students have learned to set reasonable goals for themselves. After that, folders may be collected and checked on a weekly basis, but they probably never should go for longer than one week without at least informal checks.

Early Problems

If a class is having difficulty meeting the goals set, the teacher may want to cooperatively work out a more binding agreement. A class meeting can usually pinpoint the problem, and students can help formulate the wording as in the example of a daily contract.

Even after a class has been setting goals for a long period of time, there may be an occasional let-down period. When this happens, a re-focus will often get things back on the track. One simple method of helping students realize what is happening is to keep either class or individual graphs of the contracts completed.

In his early efforts, the teacher will probably be mainly concerned with goal-setting and individual planning of use of time. He will not yet have developed truly individualized learning packets; however, the assignment guides will begin to reflect efforts to incorporate components that take into consideration different learning styles, rates, etc.

While the teacher is still writing weekly assignments that he expects the entire class to complete, a contract can be included as part of the guide. A simple check of the squares as the students completes his tasks serves as a record of work completed. A comparison of the student's goals for the week with the work completed gives an accurate picture of how well he is meeting his goals.

Record Keeping

After the instructional packets have been developed

DAILY CONTRACT

Date:

Math pages I will do:

Packet activities I will do:

I promise to complete the above work today. I will not let myself be distracted. I am able to achieve the goals I have set for myself.

_____

Signature

and students are proceeding independently, a teacher may wish to modify his contract to simplify record-keeping. Almost all students are aware of their pacing and ability and are able to plan on a weekly basis.

Each Monday students list the pages, activities, parts of packets, etc., that they plan to complete for the week. After handing in their goal sheets, the information is transferred to a permanent record kept by the teacher. In this way, there is a quick reference to several weeks of work. Each Friday, through individual conferences, the teacher "checks out" each student's work.

Student-Teacher Contracts

Most students have no difficulty setting realistic goals; however, there will probably be one or two, perhaps more, who will be unable to meet their goals. An individual contract may be of help. In this instance, the teacher and student cooperatively determine goals for the week or day, and the student signs a formal contract with the teacher witnessing. Penalties for not meeting the contract may be set at the same time.

If this fails to elicit follow-through on the part of the student, the teacher may wish to involve the parents. A similar contract is used (on a daily basis) except that the parents are involved in signing the document. Consistency is the key once parental cooperation has been secured. the parent must know that a contract is coming home every afternoon. If goals have been met, a parent simply signs the contract and returns it the next morning. If goals have not been met that day during school time, parents are encouraged to set aside a time for homework so the quota is completed before school the next morning.

Evaluations

When one weighs the advantages of a more open classroom, perhaps the greatest advantage is the constant, on-going individual evaluations that are possible in this setting.

Diagnostic and criterion tests, which measure the cognitive domain, are integral parts of learning packets. These tests are given frequently enough to provide specific information to students, teachers, and parents about which skills have been mastered, which still need to be worked on, and at what point along the learning ladder a pupil is

CONTRACTS COMPLETED _____

100%												
75%												
50%												
25%												
	Monday	Tuesday	Wednesday	Thursday	Friday	OR	Oct. 1-5	Oct. 8-12	Oct. 15-19			

ASSIGNMENT SHEET — WEEK OF JANUARY 10-14

Check when completed

1	4	7	10	13	16
2	5	8	11	14	
3	6	9	12	15	

1	3	5
2	4	6

1	2	3	4

1		2

MATH:

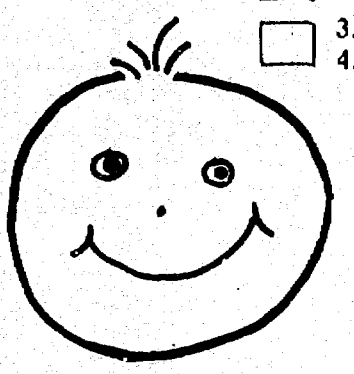
1. Complete at least an average of two pages each day (10 pages for the week).

SCIENCE:

1. Complete at least the first four cards of the "A-Blocks". I'll explain the procedure Monday. You will have to sign up ahead of time to use them. No more than four people at a time.

SOCIAL STUDIES:

1. Current events on your assigned day. Be prepared ahead of time.
2. ☐ Write a one-paragraph *summary* of each of the two films we see this week.
3. ☐ Read pages 110-112 and answer questions 4 and 5 on page 112.
4. Choose *one* of these options to do:
   a. Research and write a report about one of the following men. Two paragraphs should be enough. The first paragraph should tell something about his background (birth, where he lived, occupation, etc.) and the second paragraph should tell what he did during the Revolutionary War.
      1. George Washington
      2. George Rogers Clark
      3. Lord Cornwallis
      4. General William Howe
      5. Benjamin Franklin
      6. King George III
      7. John Paul Jones
   b. Draw and label three or four pictures showing battles during the Revolutionary War.
   c. Construct a crossword puzzle about the Revolutionary War to be run off for the rest of the class.
   d. Make a diorama in a small box showing one of the battles or another important event during the Revolutionary War.



Have a good week!

11-11:45	11:45-12 CURRENT EVENTS	1:15-2:20	1:15-1:45—Film "American Revolution"	2:20-3:15 P.E.	
11-11:45		1:15-2:20		2:20 2:40 Exercise	2:45-3:15 MUSIC
11-11:45		1:15-1:45	1:45-2:20 LIBRARY	2:20-3:15 P.E.	
11-11:45 11:40-12 Class Meeting		1:15-2:20 2:20-3:15		2:20 2:40 Exercise	2:40-3:20 2:40-3—Film
11-11:45		1:15-1:25	1:25-1:50 MUSIC 1:50-2:20	2:20-3:15 P.E.	

CONTRACT #5

Math. | Soc. Stud. | Sci.

Date	Standing on Skills Tests	Monday Pages I will do	% Accuracy I will achieve	Friday last page done	Score # right / # done	Check out		Monday projects I will do	Check out	Standing on Self-Tests
Mon. Oct. 1	Passed Skills Test II 9/15	93 — pp. 114 -115	90%	Oct. 5 pp. 113 I had lunch duty so didn't get to pp. 115	14/16	M.K.		Report on Franklin I.L.P. - Observations #2-4-5-9	M.K.	None attempted
Mon. Oct. 8		pp. 114 -124	90%	Oct. 12 pp. 130 Easy work!	24/24	Should by-pass this section M.K.		I.L.P. - Observations #7-8 I.L.P. Ancient Indian Civilization #1-2-3 Map of Peru	Needs help with the map. M.K.	Passed Self-test on I.L.P. Observations. Should take Criterion Test.
Mon. Oct. 15										

CONTRACT AGREEMENT

STUDENT: _____ SUBJECT: _____

TEACHER: _____ DATE: _____

I, the above mentioned student, do hereby agree to fulfill the requirements listed for the below specified instructional goal by _____
(date)

Instructional Goal Requirements:

_____
_____
_____
_____
_____
_____

If, for any reason, the above specified goal cannot be met, I agree to notify the teacher, in writing, at least two school days prior to the expiration date agreed to above.

_____
(Student's signature) (date)

_____
(Teacher's signature)

_____
(Parent's signature)

_____ _____ _____

The above mentioned instructional goal requirements (have ☐, have not ☐) been met.

_____
(Student's signature)

_____
Teacher's signature)

Comments: _____
_____
_____
_____
_____
_____

performing.

One does not need an individualized program to secure this information; however, the more open classroom provides another dimension of evaluation that is difficult to achieve in a teacher-centered classroom—that of frequent teacher/student informal evaluations. Since there is no need for the teacher to always be at the front of the room, there is time for interaction with each student. Hopefully, the teacher will have some individual contact with each student every day. He does this by moving around the room offering help and encouragement to individuals and groups during work periods, or more likely, by being contacted by a constant flow of students as one of the resources of the room.

Many learning packets have built-in provisions for the students to contact the teacher. The math program, for instance, may require students to see the teacher for a conference after every few pages. Other packets may require checking and initialing by the teacher for each step completed. In addition, goal-setting and contract requirements usually are discussed by each individual with the teacher.

Pupils utilizing learning packets.

As in all classrooms, some children contact the teacher several times a day. Other students initiate a contact with the teacher only when assistance is needed. To make sure the instructor is regularly talking with each child, a teacher may want to keep a simple check sheet of students consulted with during the day. At the end of a week, it should be readily apparent which students are not making frequent contacts with the teacher and, if necessary, the teacher can then initiate the contacts.

Often a student needs only the assurance that the teacher is there to help, and he finds it comfortable to seek out the teacher. Recording how often each student conference with the teacher takes a little time, but the effort is repaid in increased communication and understanding. It is very easy to forget about the child who quietly gets his work done every day.

Since students are involved in setting or helping to set their goals, they also need to be involved in evaluating how well they have met the goals. Frequent class discussions centering on use of time, work habits, etc., help to focus the class on analyzing reasons for exceeding expectations some days and not meeting them on others.

A perfect time for individual evaluation is during the time set aside for weekly conferencing about contracts. As each child discusses his contract and completed work for the week, he and the teacher may evaluate quantity and quality of work as well as reasons why perhaps a contract was not met. Usually a child, if given the opportunity, can pin-point the reasons he has not performed as well as he might. Once he has verbalized the problem, he is in a much better position to correct the situation himself.

The teacher may also use written evaluations on a weekly or daily basis. These may include cognitive as well as affective-type questions to direct each child into an evaluation of what and how he is doing.

The key, whether individual, group, written, or informal evaluations, is to have frequent evaluations and a feeling by the students that their evaluations are important.

Examples of different types of written evaluations are included.

Learning Packets

In a totally open classroom setting, a planned sequence of concepts or skills is not required. The students themselves determine the course, with the teacher always ready to provide guidance and act as a resource when the time is ripe. In the more structured setting described in this paper, however, the teacher must plan in detail in advance of where any one of his students is performing at a given time. In other words, he must keep ahead with his lesson planning!

SAMPLE OF TWO LEARNING PACKETS AND ATTACHED STUDENT EVALUATIONS

Name _____

SCIENCE

"Structures"

The required activities of this unit must be completed by *Nov. 30.*

PURPOSE: The primary purpose of this unit is to develop your skills in solving problems by learning from trial and error.

REQUIREMENTS:

1. Use the clay provided to build a tower as tall as you can make it.

   Result: ..... inches high

2. Use the clay provided (and any other materials you want) to build a bridge as long as you can make it. It must be able to support the weight of at least two washers.

   Result: ..... inches long

3. Using straws, build a bridge as strong as you can make it. Test its strength and answer these questions:

   a. How many washers can be hung on your bridge before it collapses? .....

   b. Does it matter where the washers are hung? .....

   .....

4. Using 50 straws and any fastening material you want, construct as tall a structure as you can.

   Result: ..... inches high

EXTRA CREDIT

1. Build structures using uncooked spaghetti.
2. Roll or fold writing paper to make a *strong* structure.
3. Make a model of a community (see the teacher for help and suggestions).
4. Make other structures using any materials you want: wood, marshmallows, toothpicks, etc.

ART

"Stitchery"

1. Complete a stitchery project using any idea you like.

   a. Use at least three different stitches.
   b. Make a sketch of your design on paper first.
   c. List the materials you will need (size, color, etc.).
   d. Let the teacher know at least a day ahead of time the materials you will need.

2. Your completed project will be evaluated on the following:

   a. Neatness
   b. Variety of stitches used
   c. Design
   d. Color coordination

YOUR COMPLETED PROJECT WILL BE DUE DECEMBER 10.

EVALUATION OF STITCHERY PROJECT

1. Was your project finished on time?..... If not, how late?.....
2. How many types of stitches did you use?.....
3. Did you draw your design on paper first, then chalk it in on the burlap?.....
4. My project was (AS NEAT AS I COULD MAKE IT ☐, SO-SO ☐, SLOPPY ☐)
5. The colors I used were: .....
6. Comment about the assignment: .....

.....

.....

EVALUATION OF SCIENCE UNIT

1. Were you able to solve all the problems (do the requirements?) .....
2. Were you satisfied with what you did the first time, or did you try some things more than once?.....
3. How did you learn from your own and others' successes and mistakes?.....
4. Why do *you* think we did this unit?.....
5. How did you feel about building a tower after Daryl reached the ceiling with his?.....

.....

6. Comment about the unit on "structures". .....

Name: ..... Week of: .....

1. How have I helped others this week? Be specific. .....

.....

2. In what ways did I try to improve my behavior and study habits this week? .....

.....

3. How well am I working in this seating arrangement? .....

.....

4. My behavior is (helping, hindering) others around me.

5. What steps for improvement can I take for the next week? .....

.....

6. What were my goals for this week? (learning or behavior) .....

.....

7. Which of these goals did I meet this week? .....

.....

8. Goals I would like to set and meet for next week: (learning or behavior). .....

.....

9. Miss Brownfield, I still need some help .....

.....

10. Additional comments: (You may write any other comments on the back of this sheet.) .....

.....

.....

SAMPLES [Cont.]

NAME:_____ WEEK OF: _____

RESPONSIBILITY:

1. What class jobs have I been responsible for this week? .....
.....
2. I have remembered to do them on my own:

Always Usually Sometimes Never

3. What extra tasks have I performed to help my class? .....
.....
4. How have I helped others in my class? Be specific. .....
.....
.....
5. How did I try to improve myself as a member of my class and school? .....
.....
.....
6. What steps for improvement can I take for next week? (In what ways can I do a better job as a student and as a class member?) .....
.....
.....

WORK HABITS:

1. When I come into the room after recess, lunch, music, etc., what do I do? .....
.....
.....
2. How well have I worked in my group or with my partner? .....
.....
3. I can help my partner work better next week by .....
.....
4. I could manage my class time more wisely if .....
.....
.....

Goals I would like to set for myself for next week: (Learning or behavior) .....
.....
.....
.....

SAMPLES [Cont.]

Name: Week of:

1. List three math concepts you have studied this week.
   1. .....
   2. .....
   3. .....
2. What three social studies tasks have you completed this week?
   1. .....
   2. .....
   3. .....
3. What extra projects have you been working on this week?
   .....
   .....
   .....
4. How well have you met your learning and behavior goals for this week? Be specific. .....
   .....
   .....
   .....
5. Goals for next week:
   1. .....
   2. .....
   3. .....
6. My behavior and study skills this week have (helped, hindered) my progress toward meeting my week's goals. .....
   .....

SAMPLES [Cont.]

Name.....Date.....

SELF-EVALUATION

1. Describe your personal goal(s) for the week and tell whether you accomplished it (them). .....

.....

.....

2. How well did you use your time this week? .....

.....

3. Which activity did you enjoy most this week? .....

.....

4. Which activity did you enjoy least? .....

.....

5. Were you able to complete all class requirements if you had used your time well? .....

6. Was there enough time to complete the requirements if you had used your time well? .....

7. What do you usually do as soon as you come in from recess? .....

.....

8. Is the teacher offering you enough individual help when you need it? .....

.....

If you have not completed all requirements from *last* week, list the assignments you have not finished.

.....

.....

.....

.....

signed

Mike—This is your self-evaluation for Language Arts for this term.
Please write an honest, realistic comment on each objective.

LANGUAGE ARTS: The student is able to:	Student Response:
1. Demonstrate a responsibility in completing individual projects.	I think that I completed and handed in on time most of my projects. On a couple I didn't have enough time.
2. Show a knowledge of the organization of a newspaper.	I'm capable now of writing a good news story with all the facts and everything. And I got an experience on different responsibilities.
3. Collect information and write a news story, editorial, and feature article.	I can do each pretty good containing facts and the who, what, etc., in the right part of the story.
4. Identify the components of a short story.	I profited most from the filmstrips, making the s.s. into a with the climax in the point and all the rest in the shape.
5. Read the required sequence of short stories, within the framework of time designated.	I don't know if you mean the s.s. packet or the s.s. book, but I did pretty good on both. The problem I'm having now is not enough time for homework. I've got something to do almost every night.
6. Identify the important aspects of a novel.	A novel should really follow a similar pattern as to the s.s., but in an expanded way. It should contain all the basic things for a story and more.
7. Analyze techniques used by an author writing a novel.	I am beginning to see all the sneaky ways that the author puts a name, idea, etc. right under your nose without coming out and saying it.
8. Demonstrate the proper form and content of friendly, social, and business letters.	I got it all down on paper and didn't realize how we (Americans) are such slobs compared to the Englishmen who speak correctly, eat correctly, and write letters correctly before.
9. Show consistently accurate spelling in his written work.	I am very pleased this year with my spelling. I feel I have really beared down and got to spelling work.
10. Express himself clearly in writing and speaking.	My writings lately have been poems, as I now find poems so very beautiful. My poems have changed from useless piles of words into beautiful, flowing expressions.

OBJECTIVES FOR NARRATIVE REPORT	*Rita Smith*
LANGUAGE ARTS: The student is able to:	Student Response:
1. Write interpretations and analyses of plays read.	Yes, I feel I can talk about plays and write character sketches but I still think that when I read out loud my reading isn't as good as when I read to myself.
2. Write poetry selections demonstrating an ability to use different forms and techniques.	I think I can write the different kinds of poetry but I do take a long time to write long ones. (I do have a little trouble with them.)
3. Use, in writing and speaking, appropriate and expressive vocabulary.	Well, I think I use good words when I talk even though sometimes I have trouble talking freely.
4. Research, organize, and write a report on a phase of drama.	I can write reports easily like the one on Shakespeare wasn't that hard although I had trouble starting it.
5. Contribute to the production of the school newspaper.	Yes, I had lots of fun being in charge of creative writings and for the second newspaper I had fun being on the headline staff. I think I was helpful!

ALTERNATIVE EVALUATION STYLES

Mark the face that shows how you feel about:

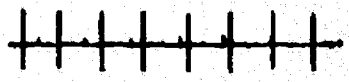
1.  Your achievement in math this week.

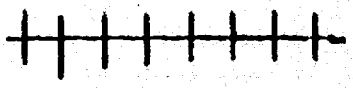
2.  Our new room arrangement.

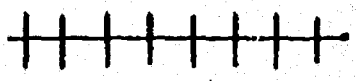
3.  Your choice of art option.

4. 

Place these statements on a scale of 1 - 10, with 10 being most positive.

1. The present science lab organization provides a good setting for learning. 

2. I have done a good job of selecting partners this week. 

3. The film on tidal zones gave me a good background of information. 

4. 

Since students are completing "units", objectives, or an objective at different rates, provisions must be made for those who complete their learning sequence earlier than the rest of the class. This can be handled in one of three ways: 1) either "enrichment" activities are included to keep the faster students learning until the entire class has completed a unit, or 2) when students have finished a learning sequence, they begin another sequence regardless of where the rest of the class is working, or 3) students are allowed to pursue their own interests once they have satisfactorily completed the required work.

So far this approach to learning does not sound much different from a traditional assignment guide; however, there are crucial differences. While content is certainly important, equal weight must be given to several other factors:

1) The student should have some choice in setting his own goals.
2) The child should be given the opportunity to evaluate his own performance.
3) Provisions should be made for the child to move at his own rate.
4) The student should be given the opportunity to choose the learning style by which he learns best.
5) The activities should be of high interest to the student.
6) The requirements for any one child must be realistic in that he must have the capabilities to complete them.
7) Provisions should be made to test when a student has attained the objective(s).

Content and sequence of skills are more than adequately mapped out in district publications, state guides, textbooks, and the like, so there is really no problem in deciding **what** or **when** to teach. The problem for the teacher is to plan so that his assignment guide takes into consideration the seven points just listed. One way of doing this is for the teacher to break his goals down into behavioral objectives and structure the learning situation so that the objectives are met. For the purposes of this paper, these assignment guides or lesson plans shall be called, "Learning Packets".

Style of Packets Vary

As with all other components of a more open classroom, the style of learning packet used will depend on many factors. There is no one way of writing them. The teacher will probably want to experiment with several different types before selecting one format. Even after he has decided what works best for him, the teacher is certainly not bound to use that format. For some things, he may decide another format is more functional (or use one format for math, another for science, etc.); however, he will probably find it is to his advantage to select one format and stay with it most of the time. Otherwise, the teacher will be spending a great deal of time explaining procedures and getting students used to working comfortably within a particular framework.

Before discussing some types of packets that have worked for other teachers, it must be made clear that every packet must include at least these three components:

1) a list of the objectives students should be able to meet when they finish.
2) directions that are simple enough so every student in the class is able to follow them.
3) some method of keeping track of what has been completed (for the information of teacher and student).

Samples of pages from learning packets are included for suggestions they offer. Most students are used to having someone (usually the teacher) tell them not only what they will be doing in a subject but also how much time they will have to work on it. The first type of packet is designed to teach students to plan and make use of their own time. A weekly assignment guide is dittoed and handed to each student on Monday. At the bottom of the guide is a class schedule indicating work periods that will be available that week.

The teacher and class will initially need to spend much time discussing the setting of goals and responsibility for meeting them, budgeting of time, types of conditions each student best works under, etc. When the procedures and purposes are clear, students will then fill in their goals for the day, taking into consideration how much will need to be done on a daily basis in order to finish the teacher's requirements for the week. Each student must also decide whether he would like to use a large block of time to complete requirements in one subject before going on to other subjects, or perhaps whether he would like to work together with one or two other students.

Adjustments for the Program

It is almost pointless to list the problems that might arise, since each class and situation will be different; but there are some problems that seem to come up frequently. Some students will find they need a quiet atmosphere to work on some things. If another group is working on a more noisy activity at the same time, some kind of a solution needs to be worked out. Ideally, the students will establish standards, suggest a different room arrangement, or whatever. If they are not able to solve the problem, then the teacher will need to step in with alternatives.

SAMPLE OF A WORK GUIDE

Name _____ November 8-12

Learning Goals For This Week

Math: Complete and check pages 46, 47, 49, 50, 52, 53 (even problems), 54 (1-8, and 55. Cross out each page number after you complete and check it.

Social Studies: Complete at least the first three steps of the assignment guide for your colony. Be ready for a class discussion Wednesday on the climate and land features of your assigned colony.

Science: Complete the first four task cards on "Drops and Streams".

Mon.	9:05-10:37 L.A.	10:46 10:55 A.	11:00-12:00 11-11:30 vocal music class discussion	12-12:55 L U N C H a n d R E C E S S	1:00-1:45	1:45-2:20 Library	2:20-3:15 P.E.	3:15-3:25 f l n a l b u s l n and e s c s l e a n- u p
Tues.	L.A.	M.				2:00 Class Meeting	2:20-2:35 exercises	
Wed.	L.A.	R E C E S S					P.E.	
Thurs.	L.A.						2:20-2:35 exercises	
Fri.	L.A.				Young Citizen Discussion	1:55-2:20 Vocal Music	P.E.	

The teacher will also probably find some students who seem to thrive on planning their own time and who accomplish a great deal. Other students will not be able to handle so much self-direction at this time. With those few who are not yet able to assume this responsibility, the teacher will first want to counsel individually. If some are still having difficulty meeting the goals, perhaps they need a more structured schedule—at least for a time.

The amount of time a class will need to spend planning goals on a daily basis will vary. Most students will find that they have either under or over-planned for a particular day. Adjustments need to be made, yet the goal is to get students to be able to project further than one day at a time.

At this point, the teacher may still want a daily record of work completed, or he may feel the class has progressed enough to keep weekly records. No matter how much responsibility the class assumes, the teacher will probably not want to extend the record-keeping past a one-week period. It is essential that the teacher know at what point each child is at any given time. Once the class has become skilled in planning work time (and the teacher feels ready for the next big plunge) the packets should begin to reflect learning styles. From research and experience, teachers know that people learn in many different ways. Some learn best by reading, others by hearing, others by manipulating objects, etc.

During the transition period, students should be exposed to many different modes of learning. They will all still be going through all the tasks in the packet to reach the objective(s), but the focus will be on becoming aware of which mode(s) of learning is the easiest for each student.

Students, with guidance, can select the mode of learning that is best for themselves. In fact, given the choice, they would probably automatically choose what suits them best. However, it is important that students are consciously aware of making the choice and why. This can probably best be handled through class discussions and evaluation periods.

Options to Learn

The next step in making students self-directing is to give them optional ways of meeting each task. This means that each task must be written with at least three (if possible) means to complete it. One possibility might be a reading option, another an audio or visual option, and the other a kinesthetic activity. The student would then choose one of the three modes of learning to complete the task.

Giving students the option of choosing their mode of learning does not mean the teacher is encouraging the students to rely only on the way they learn most easily. Children need to gain skill in using all types of learning styles because most find that different ways of learning fit different tasks. Therefore, a student should be encouraged to try a variety of activities requiring more than one learning style.

Transparency Questions

1. **Woodland Scene**

    1. What do you actually see? Is there any evidence of animal shelter?
    2. Notice the mound at the bottom right. What might have caused it? (You are making an inference.) What are the small objects on the ground?
    3. Notice the hole in the tree trunk on the right. What might have caused it?
    4. Notice the holes in the tree trunk on the left. What might have caused them?
    5. Notice the tree trunk down on the ground. What might have caused that?
    6. Have your group recorder list the observations you have made about this transparency.

2. **Animal Feet**

    1. Which animal might have the home high in the tree trunk? What would its feet have to be able to do?
    2. Which animal might have made the mounds? What would its feet have to be able to do?

3. **Bird Claws**

    1. Which bird might have made the small holes in the trunk?
    2. In what position would the bird have to be in order to make these holes?
    3. What would its feet have to do?

4. **Bird Beaks**

    1. Which bird could make the small holes in the trunk?
    2. What would the beak have to be able to do?

INDIVIDUALIZED LEARNING PACKET

Art and Man #1

Rembrandt

Objectives: The student will be able to:

1. Place Rembrandt's life in relationship to other historical events.
2. Describe Rembrandt's life, giving insight into the artist's character.
3. Identify Rembrandt's work by style and characteristics.

This packet was used early in the year. Each child did each activity, thus experiencing each of the four tracks; verbal, kinesthetic, visual, and audio. The student used this experience in making future choices about his best style of learning.

Track	Use:	Do	Check Out
1-A	*Art and Man* Magazine pages 2-3	Read and list 6 tragic misfortunes in Rembrandt's life.	
2-D	*Art and Man* Tape #2	Listen and follow directions.	
3-A	Dictionary	Look up — *chiaroscuro*. Write definition and pronunciation.	
4-C	Self-Portraits 1. chalk drawing in portfolio 2. cover of magazine. 3. P. 14 in magazine	Compare these 3 self-portraits. Answer these questions: a. Which shows most detail? b. Which is most controlled? c. Which is the most free?	
5-C	*Art and Man* mag. *The Night Watch* pages 8-9 Paper-pencil	Pick one person in this Painting. Describe him fully. What is he wearing? What kind of person is he? What is he thinking?	

Track	Use:	Do:	Check Out
6-B	*Art and Man* magazine *Lion Resting* page 10 White drawing paper	Copy this drawing as closely as you can. Notice the short, jagged lines.	X
7-C	Filmstrip — *Rembrandt* Paper-pencil	View filmstrip. Answer these questions: 1. What was Rembrandt's greatest skill? 2. What is unusual about *Lesson in Anatomy?* 3. Before Rembrandt's time, paintings were expected to do something. What? 4. Did Rembrandt use a lot of color? 5. How did his work change over the years? 6. In *The Midnight Round* (see our Art Print), describe what three different people are doing. 7. Which painting do you like best? Why?	/
8-A	*Rembrandt and the Dutch School* (book)	Use this book to answer these questions: 1. What has Rembrandt been called? (page 5) 2. Where was he born? (page 5) 3. When was he born? (page 5) 4. What was his wife's name? (page 6) 5. Was his life happy? Why? (page 7) 6. Look through the 58 paintings by Rembrandt. Which do you like best? Why?	
9-A	*Art and Man* mag.	Read and then write a paragraph describing the legacy Rembrandt left to the world.	
10-A	Available reference books	List three other Dutch painters of Rembrandt's time, and the name of a painting done by each of them.	/

CRITERION TEST

Art and Man — Rembrandt

	TRUE	FALSE
1. Rembrandt was born before Columbus discovered America.		
2. Spain was a powerful nation when Rembrandt lived.		
3. Holland was a very prosperous nation in Rembrandt's time.		
4. Rembrandt had a very sad life and became bitter.		
5. Many of Rembrandt's works dealt with Biblical subjects.		
6. Rembrandt used bright colors in his paintings.		
7. Rembrandt used detailed lines in his drawings and etchings.		
8. Rembrandt's pictures always tell a story.		
9. Picture A was done by Rembrandt.		
10. Picture B was done by Rembrandt.		
11. Picture C was done by Rembrandt.		

OBSERVING-INFERRING-COLLECTING DATA

Individualized Learning Packet

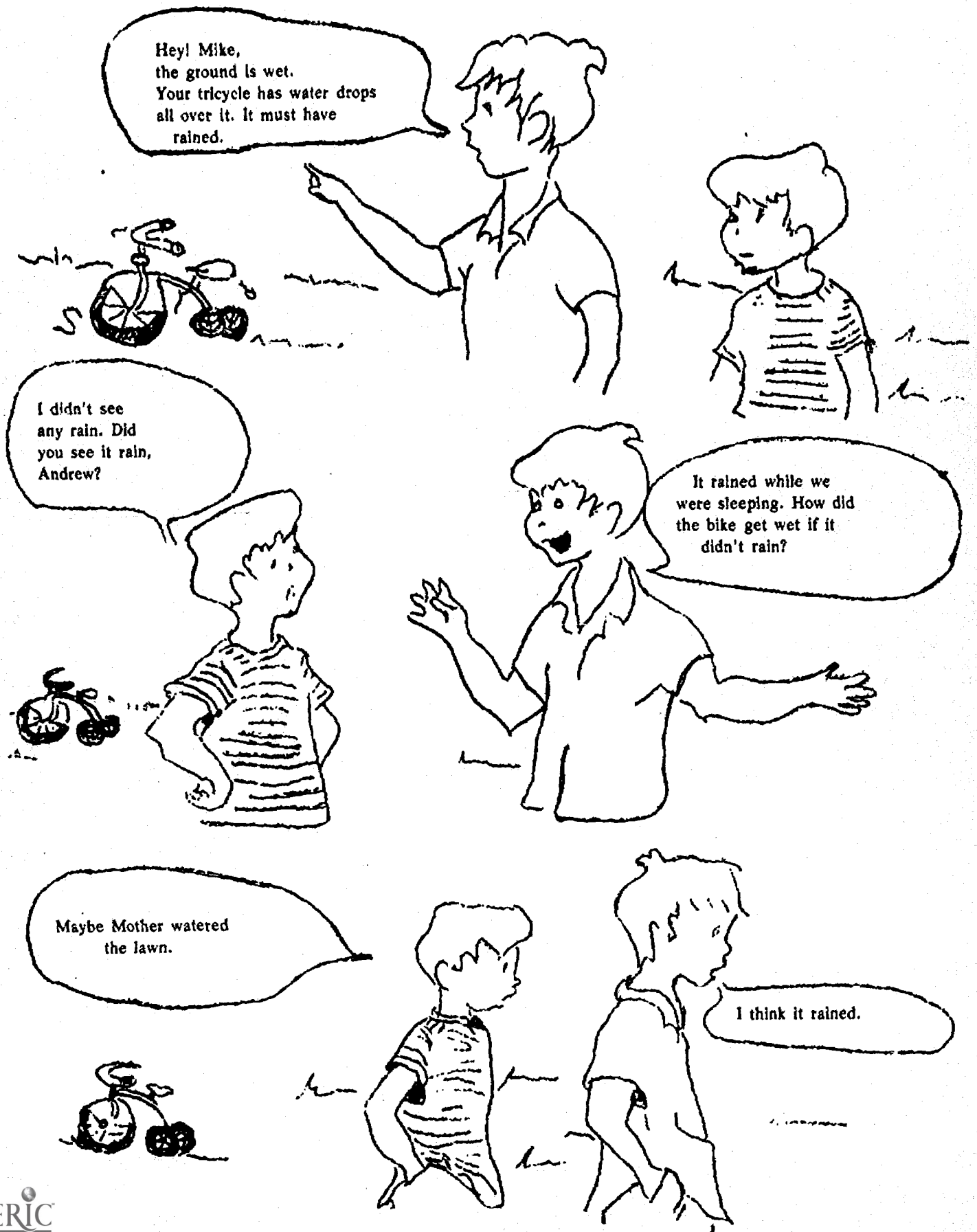
Objectives: The student will be able to:

1. Differentiate between an observation and an inference.
2. Make observations.
3. Record observations.

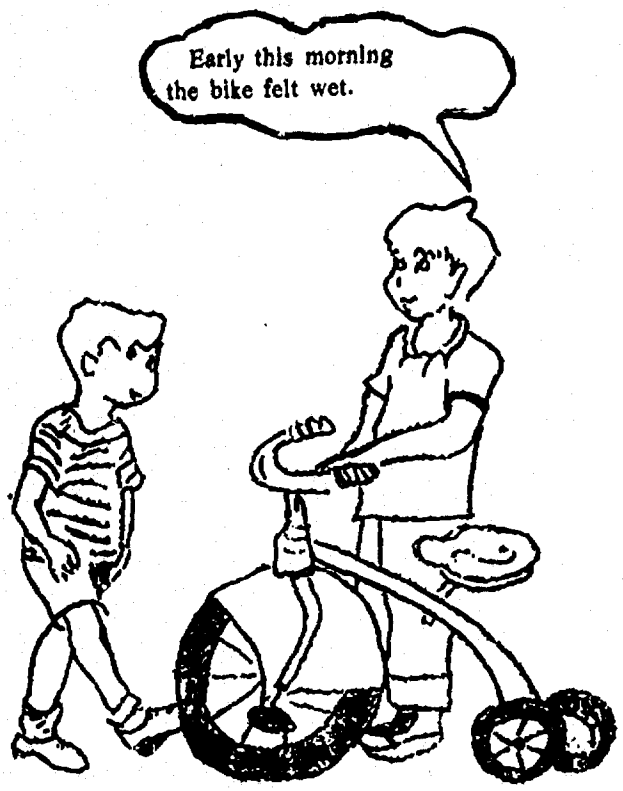
Track:	Use:	Do:	Check Out
1-A	Cartoons and Questions attached to packet.	Read and answer questions.	X
1-C	Transparency Set #1 and Questions attached to packet.	In a small group, view the transparencies. Discuss, using the questions.	
1-D	O.D.S. Tape #1 Paper-pencil	Listen and follow directions.	
2-C Outside	1 square inch template. Paper-pencil	Go outside. Place template on ground. List ten things you see.	/
2-C Inside	Piece of black paper. Tape. Paper-pencil.	Prick paper with pin point. Fasten to window. Look through hole. List ten things you see.	
3-B	Piece of colored paper. Tape or glue. Three pieces of natural material.	Go outside. Collect three pieces of natural material. Mount these on paper. Record three observations about each.	
3-C Inside	Paper-pencil	Go to the gym. List three observations about each of these surfaces: (a) the ceiling (b) the floor (c) the stage curtain.	X
3-C Outside	Paper-pencil *Seth Lewelling Outdoor Lab. Guide.* Page 37-38	Go to *tree #2* (see guide). List ten observations about it.	

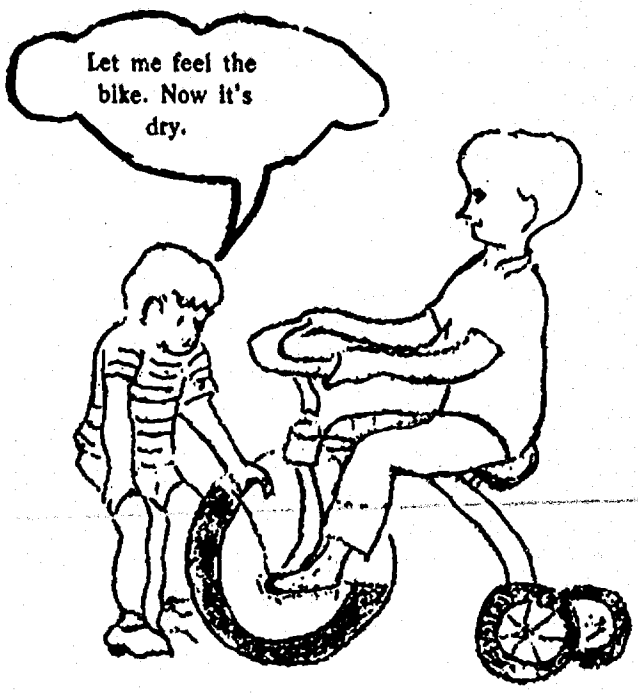
Track:	Use:	Do:	Check Out
Self-Test #1 This may be taken at anytime student feels he can demonstrate mastery of objectives.	Picture #1	Put the letter O after the statements that are observations. 8/10 1. They are skiing in a park. 2. The boy on the left is starting down the hill. 3. One boy is facing the camera. 4. Two children are sitting on sleds. 5. There are buildings in the background. 6. There are many trees in the picture. 7. It is cold. 8. The children are having fun. 9. The boys are wearing short skis. 10. There are tracks in the snow.	
Self-Test #2 This may be taken at anytime student feels he can demonstrate mastery of objectives.	Picture #2	List ten observations about this picture. 8/10	

(After 90% master of Self-tests, student may by-pass remaining activities and take Criterion Test.)

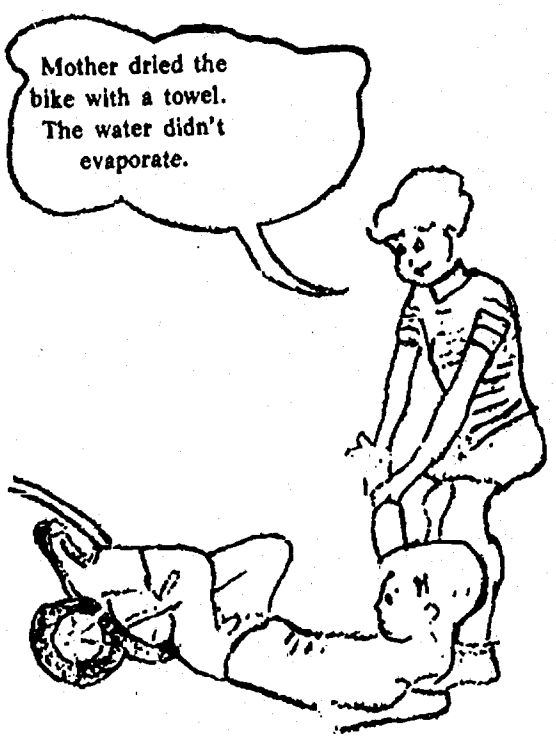


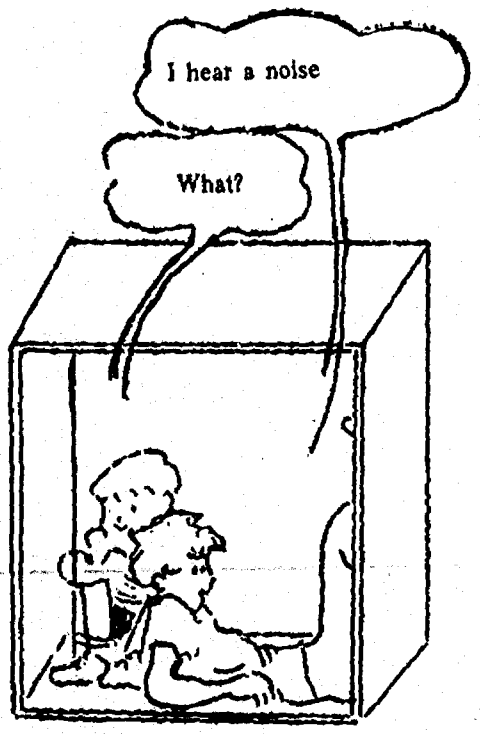
CARTOON NUMBER 1

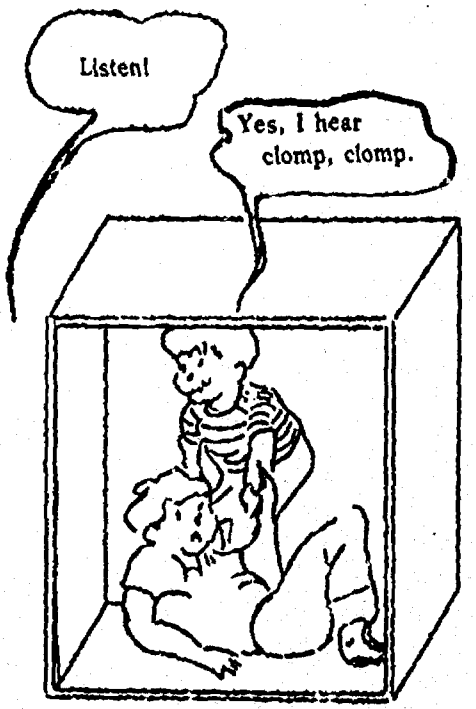

Early this morning the bike felt wet.

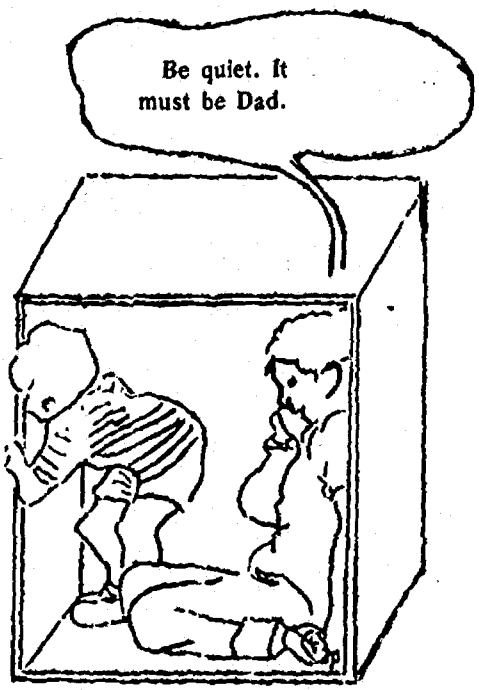

Let me feel the bike. Now it's dry.

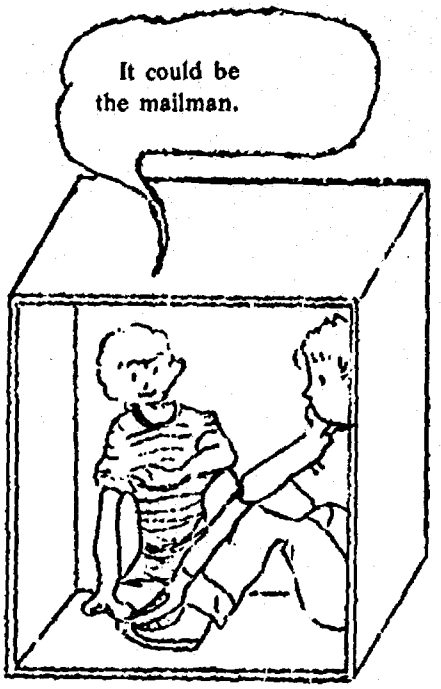

The water evaporated. It went into the air.


Mother dried the bike with a towel. The water didn't evaporate.

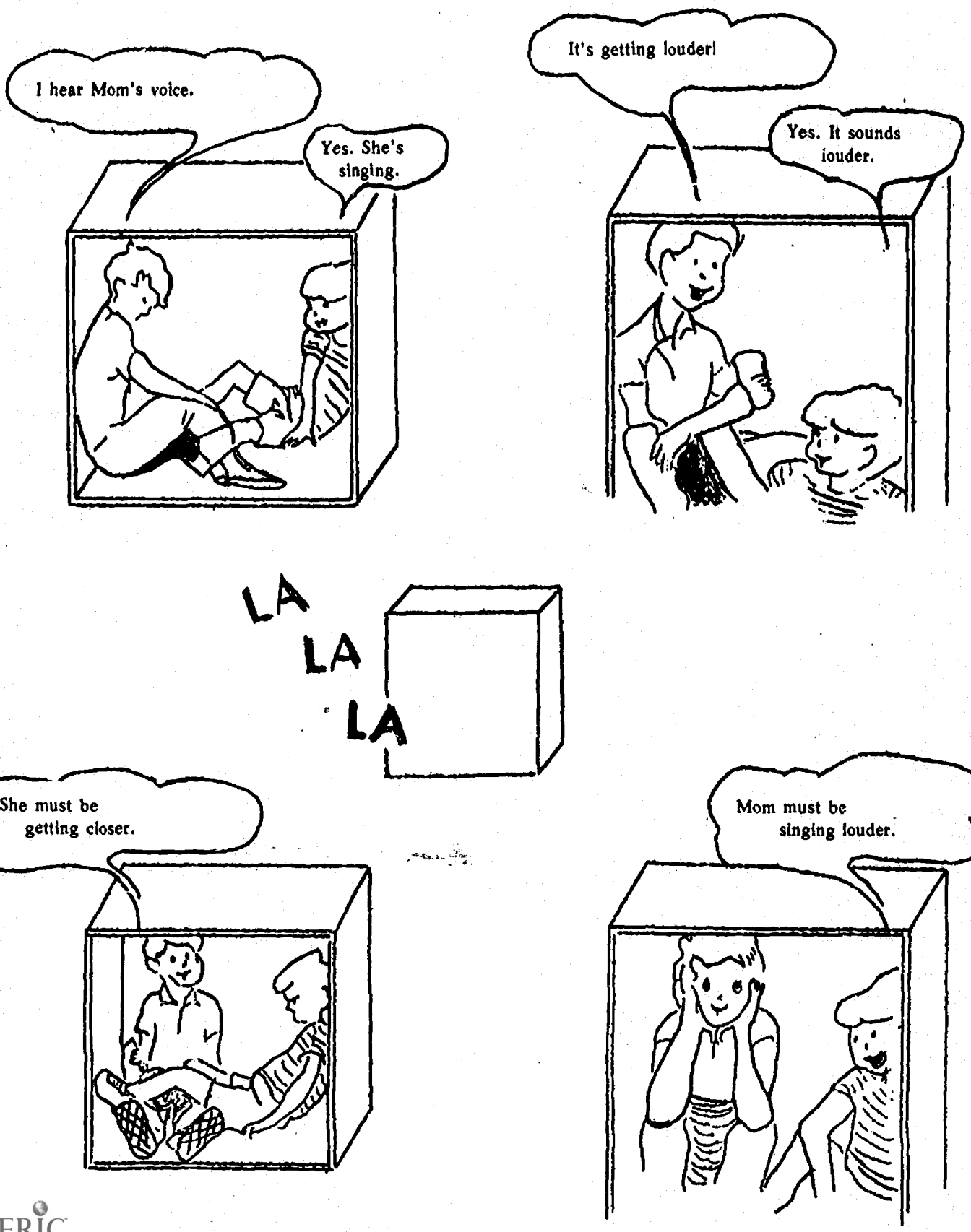






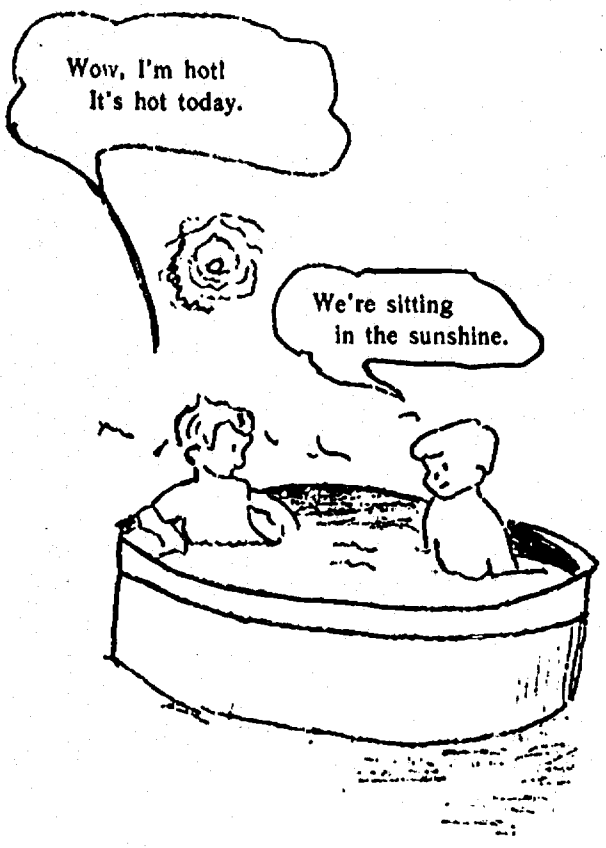


CARTOON NUMBER 3

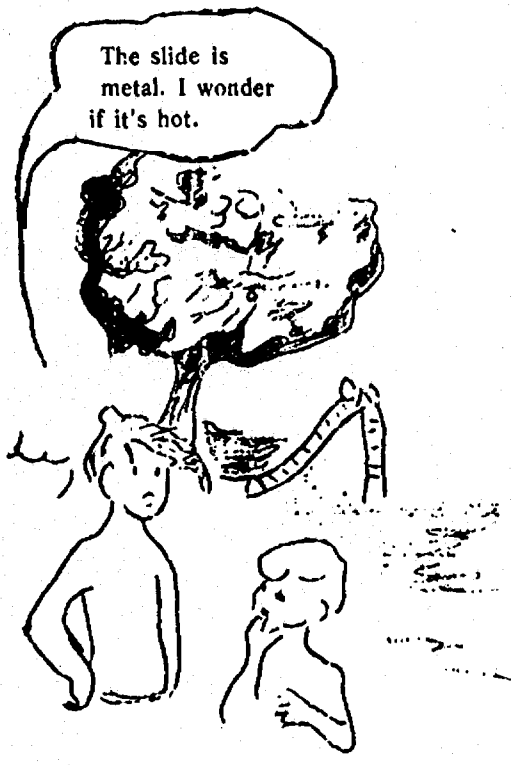


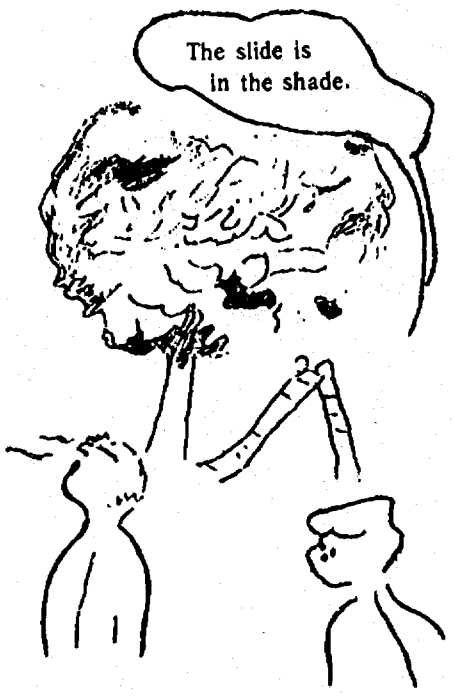
CARTOON NUMBER 4

CARTOON NUMBER 5

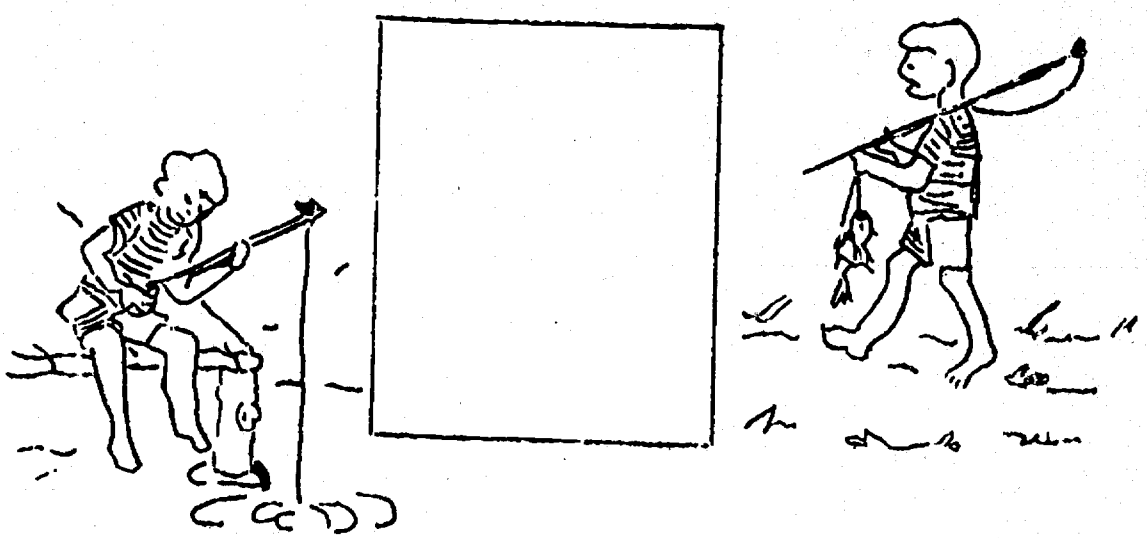

Wow, I'm hot!
It's hot today.
We're sitting in the sunshine.


Daddy's wheelbarrow feels hot.
Ouch! The wheelbarrow is hot!


The slide is metal. I wonder if it's hot.


The slide is in the shade.

CARTOON NUMBER 7



CARTOON NUMBER 8

QUESTION SHEET, CARTOONS 1-8

Questions for Cartoon 1

Which of the following statements are observations? Which are inferences? Circle 0 if you think the statement is an observation; circle I if you think it is an inference.

The ground is wet.	0	I
The tricycle has water drops on it.	0	I
It rained while we were sleeping.	0	I
Mother watered the lawn.	0	I

Which senses did Andrew and Mike use to make the observation?.....

What would you do to find out which boy is right in the inference he made?.....
.....

Questions for Cartoon 2

Which statements are observations? Which are inferences? Circle 0 if you think the statement is an observation; circle I if you think the statement is an inference.

The tricycle felt wet.	0	I
Now it is dry.	0	I
The water evaporated. It went into the air.	0	I
Mother dried the tricycle.	0	I

What kinds of observations were made? Circle the senses used: seeing, smelling, feeling, hearing, tasting.

Questions for Cartoon 3

Circle 0 if you think the statement is an observation; circle I if you think it is an inference.

I hear a noise.	0	I
I hear clomp, clomp.	0	I
It must be Dad.	0	I
It could be the mailman.	0	I

What kinds of observations were made? Circle the senses used: seeing, smelling, feeling, hearing, tasting.

Questions for Cartoon 4

Circle 0 if you think the statement is an observation; circle I if you think it is an inference.

I hear Mom's voice.	0	I
Mom is singing.	0	I
It sounds louder.	0	I
She must be getting closer.	0	I
Mom must be singing louder.	0	I

What kinds of observations were made? Circle the senses used: seeing, smelling, feeling, hearing, tasting.

Questions for Cartoon 5

Summary of observations:

Look at the pile of dirt.
Here's a hole.
I can put my foot in the hole.
I can see the bottom of the hole.
I heard Mother say she needed more dirt for her plants.

What kinds of observations were made? Circle the senses used: seeing, smelling, feeling, hearing, tasting.

Write one or more inferences you might make if you were Andrew or Mike in this situation?.....
.....

Questions for Cartoon 6

Summary of observations:

I'm hot.
It's hot today.
We're sitting in the sunshine.
Dad's wheelbarrow is hot.
The slide is in the shade.

What kinds of observations were made? Circle senses used: seeing, smelling, feeling, hearing, tasting.

Imagine that you are Mike or Andrew and write one or more inferences you might make in the situation given.....
.....

Questions for Cartoon 7

What inference did Andrew make? What inference did Mike make? Which one used past experience to make his inference?

What senses did Mike use?

.....
.....

Questions for Cartoon 8

What inference would you make about the missing picture?.....
.....

Can you imagine another inference that could be made?.....
.....

Now think of still another alternative. What might have happened between picture 1 and picture 3?.....
.....

CRITERION TEST

Observing, Inferring, Collecting Data

Using Test Mount #1 or #2, write five observations about each object.

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

(If student does not complete Criterion Test with at least 80% mastery, see teacher for alternative tracks.)

Testing

The final step in this type of learning packet would be to incorporate diagnostic and criterion tests. Hopefully, the teacher has devised final criterion tests to determine whether students have met the objectives of previous packets. In addition, diagnostic tests at the beginning of the packet help the teacher and student determine what parts of the packet a student needs to complete in order to meet the objective(s). It is not necessarily a good use of time and ability for a student to work through every task of a packet if he already can meet the objectives for which it was prepared. Some students may need to do only some of the tasks, others may need to do all of the tasks, and still others may need to bypass the packet completely. Another useful test is the self-test. This test is a part of the final criterion test that a student may take at any point in his work through the packet when he feels he has met the objectives. If he passes this test, he may elect to take the final, more comprehensive test to complete the packet.

The progression in writing learning packets just discussed is certainly not the only way of implementing packets into your classroom plans. It is one way that has worked for some teachers. One thing should be made very clear: one does not just sit down and quickly write a learning packet that includes the seven criteria listed earlier in this paper. Considerable effort and background in learning theory, writing behavioral objectives, etc., are necessary as well as a real commitment to follow through as the weeks go by. Though the task is not simple, the results make the effort worthwhile. The important thing is to start—but not proceed faster and further than the teacher is able to manage in terms of time and student accomplishment.

SAMPLE OF INDIVIDUALIZED ASSIGNMENT GUIDE

PEACE

Name Jerry Jones March 8

Good morning! Lots to do today. Ready?

Please do the checked assignments.

✓ Please read 15 minutes.

✓ Please write a story report about your favorite *character* in the story.

..... Every story has three basic parts: *characters*, *setting* (where the story took place), and *plot* (what happened in the story). Learn to spell these three parts and use them in a sentence.

How are you doing? I love you!!!

..... Write a story.

..... Be able to tell us about the characters, plot, and setting.

✓ Draw a picture of:

✓ your characters

..... your plot

..... your setting

..... Plan something to share. Why not try a poem today? Sharing: 10:45

..... Do a *noun* review page.

✓ Study your spelling.

..... Finish social studies or science projects.

✓ Study compass directions — N, S, E, W.

✓ Draw a map of the classroom.

..... Draw a map of the school.

Have a good day!!!!

SAMPLE OF A FIRST GRADE PACKET FOR A NON-READER

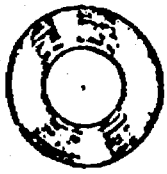
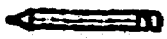
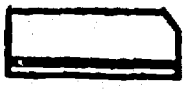
San Carlos School District

SULLIVAN BOOK 1

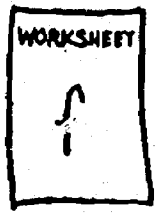
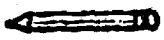
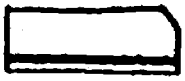
LESSON 1

Date started:

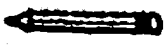
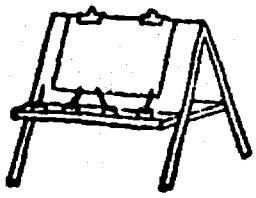
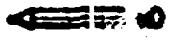
Name: _____ Date finished:

	USE	DO	DONE
	Hearing likenesses and differences in words. See T.S.		
a.	  Listen and Do S-F  pencil  crayons	Listen.  Draw a line.  Draw. 	
b.	 S 1 — Set 1	 Look. Listen. Tell. 	 T

Lesson 1 (continued)

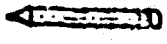
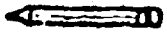
	USE	DO	DONE
c.	 SF Worksheet 22	Draw a circle. 	
	 pencil  crayons	Color. 	
	Introduce Sullivan Book 1 Do pages 1 to 17 with a small group. See T.M., page 35.		
d.	  Listen and Do 16-C  pencil  crayons	Listen.  Draw a line.  Draw. 	
e.	 S 1 — Set 2	 Look. Listen. Tell.	☐ T

Lesson 1 (continued)

USE	DO	DONE
f.  pencil  easel	Write.  I am a cat. Paint a cat. Paint 	
g.  *Sullivan Book 1,* *Sullivan Book 1* pages 18 through 21  pencil	Read.  Write. 	
T.M., pages 145-147. Introduce *s* of the plural.		
h.  drawing paper  pencil  crayons	Write.  Draw.  cat pins / cats pin	

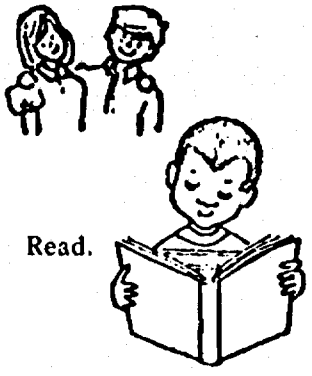
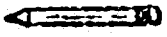
Sullivan Book 1

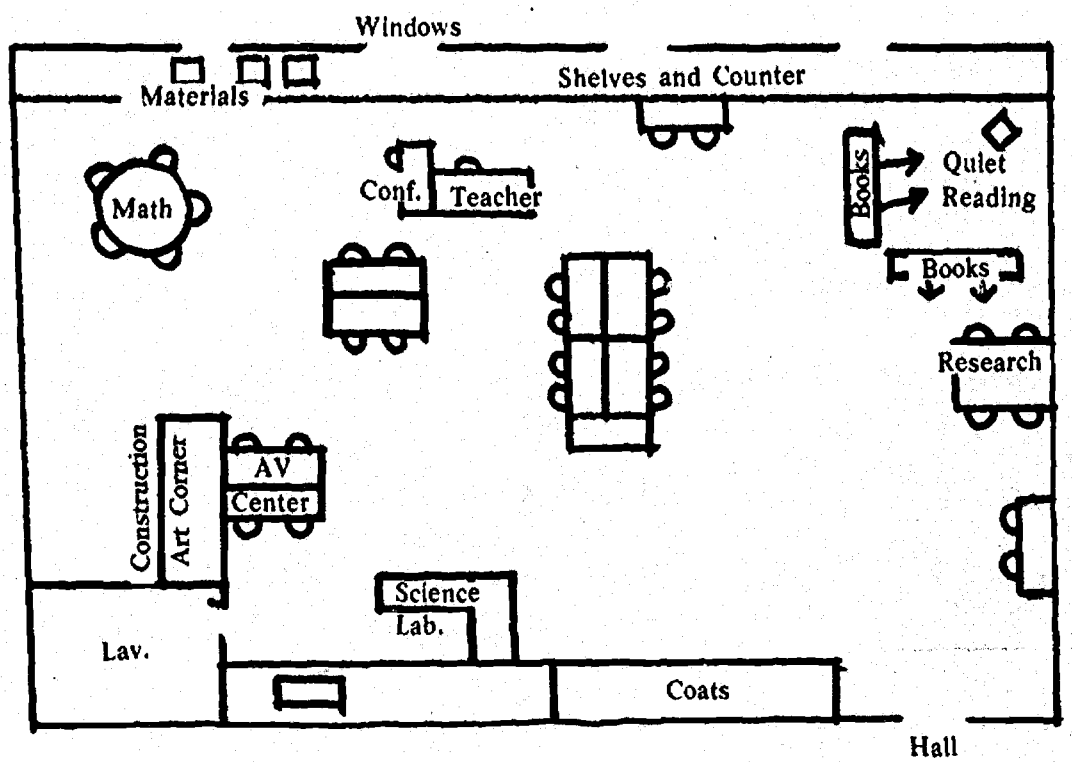
Lesson 1 (continued)

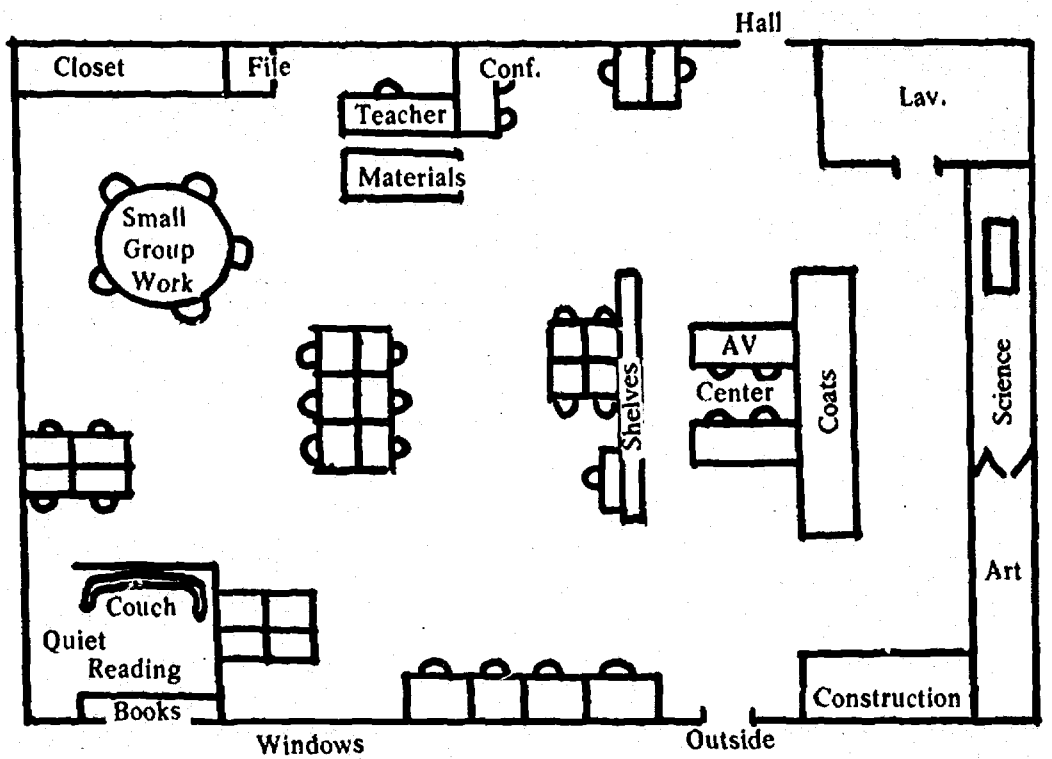
USE	DO	DONE
 *Sullivan Book 1* *Sullivan Book 1.* pages 22 through 35.  pencil	Read  Write. 	☐ T
 pencil	Write.  Match words that rhyme.	
	ani — pan mat — cat tan — thin pin — Sam	
 *Fun With Rhymes*	 Play	

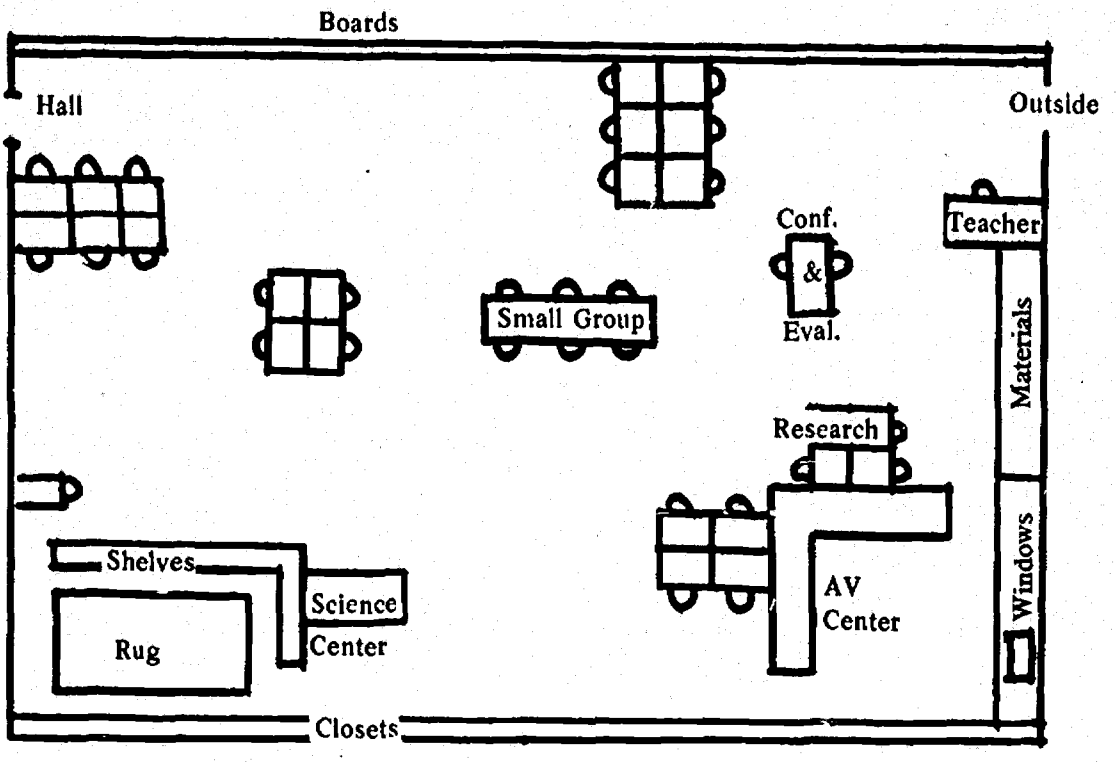
Sullivan Book 1

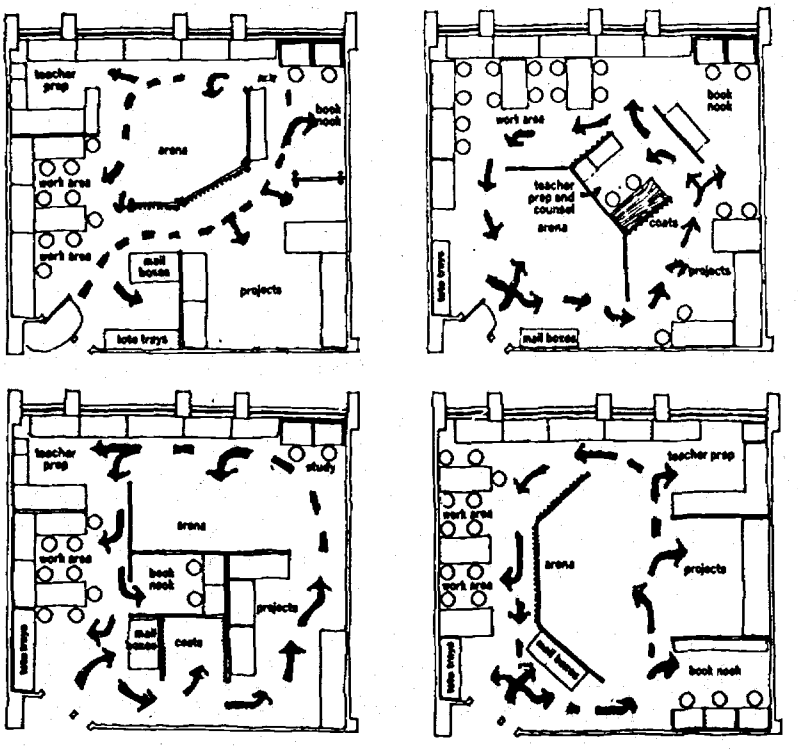
Lesson 1 (continued)

	USE	DO	DONE
1.	 alphabet cards	 Match A P M a p m	
m.	 *Sullivan Book 1,* pages 32 and 34	 Read.	
n.	 *Sullivan Book 1,*  pencil	 Read. Write. Test 1 	☐ T
	am yes tan thin tin is I no pan fat cat Tab an man pin fan sit Nip ant mat in can this		


Windows
Materials
Shelves and Counter
Math
Conf.
Teacher
Books
Quiet
Reading
Books
Research
Construction
Art Corner
AV
Center
Science
Lab.
Lav.
Coats
Hall


Hall
Closet
File
Conf.
Teacher
Materials
Lav.
Small
Group
Work
Shelves
AV
Center
Coats
Science
Art
Couch
Quiet
Reading
Books
Construction
Windows
Outside





Enclosed open space

ROOM MANAGEMENT: Physical Arrangement, Human Resources, Student's Role.

Physical Arrangement:

The idea of openness in education connotes not only a receptive attitude towards freer and more personal learning styles and rates but also a change in traditional classroom settings. Just as we change our clothes to tackle a different job or activity, so we must change our outlook on arrangements of desks and materials as we regear for a different approach to learning. First, a decentralization of the character of the classroom will facilitate the individual learning efforts of children. It is necessary to move from the traditional image of teacher-centered, passive-student classroom, to do away with "the front of the room" concept. The teacher will want to interact with his students on a one-to-one, or small group basis in order to respond more naturally and sensitively to their personal levels of learning. This is not to say that the teacher will never work with his total group. On the contrary, some situations are best handled that way, such as class meetings, some planning sessions, or creative motivation experiences. In planning the classroom arrangement, the teacher should provide for these activities also.

The teacher should take advantage of the mobility of the furniture. If he is beginning his "open class" approach in only one subject, or during a certain time period, he should feel free to regroup and rearrange chairs and desks to fit these needs. Indeed, while the original room arrangement will probably be planned by the teacher, changes will develop as the children express interests and needs and become involved in the planning process.

The reasons for changing furniture grouping may be varied: providing materials (math center, science lab, puppet workshop), accommodating differing sizes of groups (individual desks for testing or programmed learning, small circles for discussions, long tables for group-need's explanations, double desk or corner for conferencing), or planning for activities that will result in noise and movement (quiet reading area, testing area, creative drama center, games table).

However the groupings are to be made, the teacher might consider having assigned seats for specific times, such as attendance or announcements. There will be occasions when the teacher will want everyone in a designated spot. If this is worked out the first day of school, it will be a natural procedure and will eliminate a great deal of wasted teacher-motion later.

Second, the creation of a rich environment is a requisite of the open classroom. The variety and availability of a wealth of materials takes on a new dimension in this context. Since one of the prime goals is providing many avenues to learning so as to meet each child's individual style, it is important that there is opportunity to explore new areas.

Although most classrooms today have interest centers that children may go to when through with their work, the open class revolves around such centers. The child goes to the area that either provides the materials he needs, the atmosphere he needs, or the people he needs. His personal supplies should be kept in a locker, cubbyhole, box, etc. He is then free to make a decision about the location that is best for him to work at any given time. Making these decisions does not necessarily come naturally but may require guidance at first; however, this is a responsibility that child has, to be able to select the situation and materials necessary to carry out a learning task. There are some interest areas, perhaps more accurately called learning centers, which fill specific needs.

(1) **Resource** (or audio-visual, or instructional media) **center.** This would include record players, tape recorders, ear phones, filmstrip viewers, commercial and teacher-made tapes, filmstrips, and records.

(2) **Math center.** This area would incorporate two phases of the math program. First, there would be tests, worksheets, record keeping devices, correcting manuals. Second, there would be programmed materials, manipulative devices, games, flashcards, and drill material.

(3) **Science center.** Science kits and equipment, as well as more common materials, can be kept here with current materials out for experimenting and projects.

(4) **Research center.** All reference materials, from magazines to almanacs, encyclopedias, dictionaries, thesauri, maps and globes, kept in one location, save searching and frustration on the child's part.

(5) **Reading center.** This should be a special area to which children will relate. It might have a rug, a rocker, a cozy nook to curl up in. It should be in a quiet, rather removed corner of the room.

Third, materials and space should be put to optimum use. It is important that students know what materials and equipment are available, where they are kept, how to use or operate them, how to take proper care of them, the necessity of returning them to their proper places. Time spent the first few days of school in setting up these procedures so children do not have to ask for permission or assistance to use them will make students more reliant and responsible.

Classroom space should be organized around logical traffic-flow patterns, with quiet and conference areas clearly defined, with materials easily accessible and identified, with places for individual study, for small group work, and for large group discussion.

Along with better use of the classroom itself, open education also stresses the use of the outside environment as a base to develop skills in observing, recording, and interpreting.

Although physical resources alone cannot insure the success of an open approach to learning, their efficient and effective utilization can be a critical factor.

In planning the arrangement of his room, the teacher should consider these suggestions.

1. Remove the teacher from the focal point of the room.
2. Provide settings for individuals, partnerships, small groups, large groups, and conferencing.
3. Consolidate related materials in learning centers.
4. Separate quiet and noisy areas.
5. Assign seats for attendance or announcements.
6. Plan convenient traffic patterns for picking up materials, moving to testing or conference desks, etc.
7. Clarify system of securing materials, handing work in, keeping records, using equipment, soliciting assistance.

Human Resources:

Since open education supports the idea of diverse learning experiences, the human resources as well as the physical components must be carefully considered. The teacher's role changes to guide and facilitator of learning.

Instead of being largely a director of children down a predetermined path, the teacher becomes a manager of the environment and a guide to help students learn to plan, evaluate, and consider alternatives. He is a resource person, a counselor, a source of inspiration and enthusiasm. His main focus will be to promote self-direction, to allow children to grow creatively.

A teacher, therefore, needs to examine and understand his own style of learning before he can help children explore and speculate on theirs. He must be sensitive to what each of his students is doing at any given time. He must be as concerned with their affective growth as with their cognitive growth. The classroom climate and the student's perception of his role will be dependent upon the unique attitudes, values, perceptions, and communications of the teacher.

Because of the nature of the open classroom situation, which is based upon each child's needs, teachers have found it valuable to have the assistance of parents and other people from the community. This is a positive factor in reviving public interest and involvement in schools as well as enriching the learning of children.

This adult support can come in many forms. It can be from volunteer parent help, from retired people, or college students. It can be from paid instructional aides, or from other members of the staff. The effective use of extra personnel depends a great deal upon the recruiting, training, and maintenance of such a program.

The functions of these aides fall into five categories:

1. Sharing special experiences, talents, vocations on a limited-time special-project basis.
2. Helping relieve the teacher of test-scoring and record keeping, charting prescribed learning tasks, filing work in folders.
3. Directly working with individual or small groups of children in administering diagnostic or criterion tests, giving drills, giving research assistance, assisting with taping, administering time tests, assisting in art projects.
4. Procuring materials, typing, putting up bulletin boards, assembling booklets.
5. Making illustrative material, flashcards, stencils.

Another area of help that can prove very valuable is peer tutoring. Both children benefit in this instance: one gains in improvement in the task with which he is having difficulty; the other gains in self-image and responsibility. The role of the student in open education changes most drastically of all. His transition to success in this role is perhaps the most awesome responsibility of the teacher.

Student's Role:

First let us identify the characteristics of a learner in an open classroom as contrasted to one in a traditional classroom.

Traditional	Open
Teacher-active, Student passive	Student - active
Teacher-directing, Student-dependent	Student - independent
Desks in rows or grouped for ability, discipline, or cooperative reasons	Desks grouped according to material or interests
Students usually restricted to desks - movement discouraged	Students choosing area of work - movement necessary
Student talk generally restricted	Discussion and sharing crucial
Most student activities prescribed by teacher	Student making choices of activities to fit his needs

This contrast is not intended to be judgmental, nor is it meant to be a generalization of teaching modes. Rather it is designed to show how a student's role and responsibility must change dramatically as the teacher moves into an open classroom atmosphere. The student must be independent and active in order to be able to operate in an individualized program. He must develop new abilities to become a successful learner in this new program.

The Ability to Make Choices and Decisions.

The student has the opportunity to demonstrate that he has the skill or knowledge to achieve the objective(s) at the onset of each learning experience or packet. If he can meet the performance standard, he may choose to bypass that particular activity.

As he works through a learning packet, he can decide which track or mode of learning is best for him; verbal, kinesthetic, visual, or audio. He must choose the appropriate materials for his task. He must decide if he can achieve his goals best working individually, with a partner, or in a group. He needs to choose the physical area that will be most conducive to success. He has the freedom to demonstrate mastery of an objective at any time during the learning process, so he needs to decide for himself at what point he has reached his goal and is able to show his accomplishment.

The Ability to be Responsible for His Own Learning.

In any educational system, the student is ultimately responsible for his own learning; but in open education he is allowed the opportunity to practice making decisions, thus promoting a sense of self-responsibility. As the teacher moves into individualizing and "opening" his classroom, he should not expect the students to magically be able to handle these new roles. Students will make poor choices, they will abuse their freedom, they will misuse their responsibility, but these very mistakes are an important element in developing self-responsibility. Punishment or disapproval when a student wastes time, operates equipment incorrectly, or disturbs someone, would not be a positive solution. Rather, guidance in the selection of alternatives would help the student internalize the values of making wise decisions.

A student finding the tape he needed to listen to was being used, may decide to wait idly until it is free. The teacher could then help him think through the alternative courses he might take. As the student encountered similar situations, he would then understand how to proceed. To become responsible takes time and experience.

The Ability to Take Initiative to Direct His Own Activities.

Since students working individually are not receiving constant direction from the teacher, they must learn self-direction. Situations requiring initiative might be: a) deciding how to schedule his time, b) deciding which materials to use, c) deciding what to do if material is not readily available, d) determining what to do when there is difficulty understanding a learning activity. These situations can be disconcerting at first; but through experience and as room procedures are set up, the student will learn to direct himself.

There will undoubtedly be some circumstances that the student needs help with, so some system of announcing that need is required. It can be a sign-up sheet, a flag or signal of some kind, or simply coming to the counselling or conferencing area.

The Ability to Exhibit Cooperative Behavior.

The success of the individualized program is dependent upon two levels of student cooperation. First, kind and considerate behavior involving concern for other's needs and sharing of resources is essential. Second, the more structured kind of educational cooperation becomes important to peer tutoring and group interaction. The teacher needs to know his students' strengths and weaknesses well enough to be able to team them according to needs.

Also since many learning activities will be most profitable in small groupings, the ability to communicate, to listen, to be a leader, to accept other's ideas, and to build upon conclusions, are necessary.

The Ability to Make, and Live Up To, a Contract or Commitment.

The very keystone of the whole open approach to learning is found in the student's recognition of his own accountability. His gradual realization that his contract is not really with the teacher, the school, or his parents, but that he must have a self-commitment becomes the measure of the success of the program. His earliest selections of objectives, materials, modes of learning, all are in actuality commitments. He is saying, "I want to know more about this," or "I will learn best in this manner."

The teacher must be aware of how he presents options to a student so the student understands a commitment is required. The learner must not be left open to a refusal or denial. For example, the teacher will say, "Which of these three units in electricity would you like to explore: magnetic fields, electrical instruments, or electric current?" rather

than, "Would you like to work on this unit on friction?"

Another area that involves commitment is the use of time. In the teacher-pupil planning conference, the child will need guidance at first as to what direction he plans to move for a certain period of time. The teacher might say, "How much of your morning do you think you will need to complete your science experiment?" or, "When do you anticipate completing this map skills packet?"

Some children will operate well using unconventional time schedules, such as math all day Monday, or language arts all afternoon. If they honor their commitments and do not neglect other important areas, their plans should be respected. Others will be unrealistic in their expectations, either planning too much or too little. Self-realization of their own learning style, speed, and abilities is an important step in their development.

IMPLEMENTATION:

Those truly interested in exploring the joys and dangers of more open education have undoubtedly given serious thought to the rationale behind this movement. They have probably taken some small steps in a tentative effort to move toward more open attitudes and atmospheres. It is best for teachers to work out their own routes, to be able to begin where they are, and to move in the direction that is right for them.

Those who have had success with this approach to learning can share his problems, successes and know-how.

If the teacher plans to initiate the transition through opening up one time period, the implication is that he will offer options of more than one subject area, therefore multiplying his preparation and commitment. On the other hand, if the teacher would like to start right out with a totally open approach, he is faced with the rather overwhelming task of personal reorientation of attitude, behavior, expectancies, and organization of material to be presented. Here is a schedule one teacher followed in a move toward open education.

September:

1. Use a daily class schedule and plan with total group the use of time.
2. Evaluate with total group at the end of each day as to how time was spent.
3. Test for basic math skill's mastery, offering optional means of improving skills not passed.
4. Offer minimum and premium assignments in math.
5. Initiate an individual record-keeping device for math assignments.
6. Encourage work in committees on common social studies problem.
7. Train group leaders to use audio-visual equipment.
8. Establish a certain time period (perhaps right after a.m. recess) when students will come into room and go right to work on individual tasks.

October:

1. Use a weekly schedule to plan activities with class.
2. Evaluate on a weekly basis with group, setting up certain standards together.
3. Give math test over first unit in book. Those demonstrating mastery (90% at this point) begin to move ahead at their own pace, using assignment guides on a large chart. Those not passing are recycled into Track A, which involves learning the same concepts through different means (filmstrips, tapes, games, programmed material).
4. Permit students to daily correct math. record scores and percent correctly on record sheets.
5. Encourage students to choose the type of project and size of group in which to work in pursuing the social studies problem.
6. Make group leaders responsible for training their groups in proper use of equipment.
7. Set up a math center, centralizing all math materials.
8. Organize A.V. center, with student-written rules governing operation and maintenance.
9. Initiate a research center to meet needs expressed by students having difficulty locating material needed for social studies projects.
10. Establish science lab., as students expressed desire to do more experimenting.

November:

1. Students have now become reasonably self-directing.
2. Students begin filling out one-day contracts stating number of pages or activities they planned to complete and percent correct for which they strive (almost all aim too low and revise upward), and the science and social studies tasks they will work on or complete.
3. Evaluation done on an individual conference basis is based upon the fulfillment of the contract and factors that helped or hindered. Contracts are kept in a file and each child keeps a graph showing the percent of the contract completed. This gives a broad picture to the child of his success in doing what he set out to do. Much counselling is done at this stage to help the student set realistic goals and be honest with himself about his attempts to meet those goals.
4. In math, students continue to move independently; those on Track A again take mastery tests; if passing, moving ahead vertically; if not, recycling again, this time to Track B (this involving one-to-one assistance, peer tutoring, and programmed material). At each unit mastery or criterion test, the students thus automatically progress, either to new concepts, or to review and assistance tracks.
5. Students begin working in Individualized Learning Packets (I.L.P.) in social studies.
6. Students begin selecting (from a teacher-structured framework) Science Task Cards on which to work at their own pace.
7. Reading and language skill deficiencies are identified, and students are directed into individualized reading as they are ready and begin working on I.L.P. in some language areas.

December:

1. Transition is made to individual student weekly contracts. These are kept in a looseleaf binder.
2. Evaluations are done on Friday in a one-to-one conference. Results are recorded on contract sheets.
3. Personalized math program moving smoothly.
4. I.L.P. in social studies.
5. Task cards in science.
6. Total group is working together on plays in language arts.
7. Three Art Aides come in on Friday afternoons. They, along with the teacher, offer different art experiences. Students have four options from which to choose.
8. Two volunteer parents come in two mornings a week, helping record individual objectives met, graphing contract fulfillments, administering criterion tests, working with small groups in math and spelling.

January:

1. Weekly contracts continue.
2. Students write evaluations at end of week, without conferencing. Teacher transfers to contract and evaluation notebook.
3. Personalized math continues. Some time taken each week to do "Silent Math", math games and challenges as a whole group.
4. Whole group launches into preparation for a social studies pageant. Requirements are structured for whole group, including reports, murals, map-making, time-lines, plays, songs, etc. Guidelines as to time deadlines, quality standards, and procedure are established. Then students have choices as to topics, types of projects, people with whom to work, and what time periods to devote to this project.
5. I.L.P.s are begun in science emphasizing process skills.
6. I.L.P.s on short stories are begun in reading.
7. Creative-writing projects, part total group, part small group, are carried on in language arts.
8. Art options continue.
9. Volunteer mothers continue.
10. College students come in one afternoon a

week offering some enrichment in music. They work with small groups on such things as history of musical instruments, "playing the spoons", science of pitch and tone, and singing mountain songs. Students choose the group to attend for a four-week period.

February and March:

1. Weekly contracts continue.
2. Weekly evaluations continue.
3. Personalized math continues.
4. Work continues on social studies project.
5. I.L.P.s are developed on the newspaper in reading.
6. I.L.P.s in science emphasize environmental problems.
7. Speech unit is begun in language involving whole group, small group, and individual assignments.
8. Art options continue.
9. Volunteer mothers continue.
10. Music mini-courses continue.

April:

1. Planning for the whole month is tried. The teacher feels it is too long a period for students to project and sustain interest without supportive feedback.
2. Evaluation is done at end of month. Students seem to lose enthusiasm and commitment when asked to think back over this time period.
3. Personalized math continues. The spread of achievement has become considerable, but students at all levels seem to have a better understanding of what they are doing.
4. I.L.P.s in social studies—students help write these packets on areas of high interest.
5. Environmental I.L.P.s in science.
6. I.L.P.s on Poetry for language arts.
7. Whole class is working together on macrame wall hanging.
8. Volunteer mothers continue.
9. Folk songs with guitar for whole class in music.

May and June:

1. Back to daily contracts and schedules. More structure is needed this time of the year.
2. Weekly evaluations are strongly aimed at affective domain.
3. In math, basic skills are retested. Tournament of challenges is organized by students.
4. Social studies focus is on current events using committee study and Hi-Q type games.
5. In science, individual projects going on in biology.
6. Individualized reading continues and students begin compiling Poetry booklets in language arts.
7. I.L.P.s in Art History and Appreciation.
8. Volunteer mothers continue.
9. I.L.P.s in Music History and Appreciation.

It is necessary to reiterate at this point that one of the strengths of an individualized or open approach is its very unorthodoxy. There is no one way. There are, however, suggestions that can ease into the open approach as well as opportunities to balance individualized work with group projects.

There are four areas of behavior which must be considered if the open classroom is to be a presentable and well-organized learning center.

1. **Movement** must be planned with the class to establish traffic patterns, the manner in which the teacher moves about the room, and areas to be avoided (i.e. conference areas, testing station, small group instruction area).
2. The amount of **noise** the teacher can tolerate as well as the level under which different activities can operate should be discussed with the students. Subtle reminders need to be worked out with them, such as flicking lights or a small bell. Some signal should be arranged to halt all activity as the occasion will surely arise when noise level or movement has become excessive.
3. Students must realize their own **responsibilities**. They are responsible for: controlling their own behavior, their cooperation within the group, their willingness to do their share of team work, their own assigned work, following ground rules set by class, using equipment carefully, replacing materials properly, and following directions independently.

ACHIEVEMENT CRITERION

	Aptitude	Perseverance	Ability to Understand Instruction	Quality of Instruction	Opportunity for Learning
THE CARROLL MODEL*	The amount of time required by the learner to attain mastery of a learning task.	The amount of time the learner will engage in active learning efforts.	The ability of the learner to understand the nature of the task he is to learn and/or the procedures he is to follow in the learning of the task.	The degree to which the presentation, explanation, and ordering of the elements of the task to be learned approach the optimum for a given learner.	The time allowed by the teacher (or school) for the student to learn a task.
COMMENTS	A small *percent* of students (5%?) may be able to attain levels of competence beyond those possible for others. Also, a small per cent (5%?) may not be able to attain mastery under any set of conditions.	Many factors in the learning conditions and in the student's experiences may alter the amount of *perserverance* the student will devote to a learning task.	Given the highly verbal nature of the usual classroom, this ability is likely to be highly related to the verbal ability of the learner or his general intelligence.	Individual students may need very different types and qualities of instruction to achieve mastery.	The pace of learning in the usual classroom is too rapid for some students and too slow for others.
HYPOTHESES	1. More efficient learning conditions reduce amount of time required. 2. Aptitude for a particular learning task may be modified by appropriate learning experiences.	1. As students attain mastery, perseverance will increase. 2. As learning conditions become more effective, the level of perseverance required of a given student will decrease. 3. Frequent reward increases perseverance.	1. As instruction becomes more complex and abstract, higher levels of ability are required to understand it. 2. A variety of learning materials and methods may reduce the level of ability (to understand instruction) required of each learner.	1. As student ability to understand instruction increases, the quality of instruction required to achieve mastery may decrease. 2. A variety of learning materials and methods may provide the optimal quality of instruction for different learners.	1. If the calendar time for learning is fixed but students spend varying amounts of time (in and out of class) in actual learning, the achievement of mastery has positive affective consequences. 2. If students complete learning tasks in different calendar times, the achievement of mastery by the slower learners

*Carroll, J. B. *A Model of School Learning*, Teachers College Record, Vol. 64, No. 8, May, 1963.

(cont. next page)

ACHIEVEMENT CRITERION (Cont.)

Hypotheses (Cont.)

Aptitude	Perseverance	Ability to Understand Instruction	Quality of Instruction	Opportunity for Learning
		3. The use of small steps and frequent feedback in instruction may reduce the level of ability (to understand instruction) required of the learner.	3. As aptitude for a task decreases, increased quality of instruction is required to achieve mastery.	does not have positive affective consequences.

RECORD-KEEPING DEVICES

CHAPTER _____ *MATH* NAME _____

DATE	PAGE	MINIMUM COURSE	NO. CORRECT	NO. DONE	PREMIUM COURSE	NO. CORRECT	NO. DONE	TEST RESULTS	DATE

NAME _____

SCIENCE RECORD SHEET

Date	Activity	Results and Comments	Time Spent

DATE DAILY/WEEKLY RECORD OF WORK NAME

Handwriting

Math

Social Studies

Science

Health

Reading

Language

Spelling

Writing

I need to work on: .....

.....

.....

.....

My biggest problem seems to be: .....

.....

Student's signature .....

Teacher's signature .....

Parent's signature .....

(Comments on reverse side)

Work Habits: .....

Social Habits: .....

4. Alternatives must be provided for students who do not fulfill these responsibilities. Students should share in determining these alternatives. They include warning, counselling, and suspension from certain learning centers for a period of time. Continual problems would probably indicate that a student was not able to handle individualized or open learning and should, therefore, be placed on a more structured program with fewer choices and responsibilities.

INDIVIDUALIZING, PERSONALIZING, AND "OPENING" INSTRUCTION: QUESTIONS AND SOME POSSIBLE SOLUTIONS

1. How do you get started?
   This is not as difficult a question as it might seem. There are usually people in every building who are doing some individualizing or personalizing of instruction already. This is a good place to start. Talk with them about what techniques they use and how they organize their work space.
   Another important aspect of beginning is your own commitment. Make sure that you are willing to devote the extra time necessary to do the planning that will be required. It does demand more time than following teacher's guides and having all of the students doing the same work at the same time.

2. Where do you find these people to help?
   Chances are that there are some programs aimed toward personalizing instruction in every building. Other teachers will be one of your most valuable resources. For other books and guides, you will find suggestions in the resource section of this bulletin.

3. How do you make plans for your class?
   Early in the year and preferably before school starts, assess what you have to work with. What equipment and instructional materials and facilities are essential, and what can you do without or make yourself? Start with your room — how large is it? What kinds of storage, counter and desk space do you have? Do you have an outside door? Are you near the library or other resource area? What teaching or grouping responsibilities will you have? Are you self-contained or do you share teaching duties with others? Do you know what kind of students you will be having in your class—special learning or discipline problems? The list could go on endlessly; the point is to take a complete inventory of what you have and how you can make the best use of what you have.

4. How do you get programs for the students to work in?
   The answer to this one is really two-fold. There are many times you do not have the training, materials, or money needed to put them into operation. The best thing is to dive in and make as many of your own materials as you need. Do not be afraid of this phase of it. Decide on your objectives—what you want your students to gain from the program—then design activities to teach those objectives. Start looking over commercial materials and then see how you could adapt those materials to fit what you want to do. Ask yourself, "If I were a student, would I enjoy doing these activities?" Chances are if you would be bored with them, your students would not like them either.

5. How do you do all of this before school starts?
   If you have never personalized your program before, then do not do too much planning before school starts. It is always best to decide on your priorities and objectives before school starts so that you have a direction in mind. After that point though, wait and let your students be involved in as much of the planning as is practical. Obviously sixth graders can be a little more helpful in the planning process than can first graders. This is true, but that does not mean that first graders cannot tell you what they like and what they do not like. Plan and work with your class continuously. Even if you have done a lot of programming in the past, you will find that each class is so different that the exact program will not really work twice in a row. Always treat personalized instruction as an adventure for both the teacher and the learner. Your class will be able to come up with the raw ideas and then your task is to shape those ideas and your objectives into a workable program.

6. What about the mechanics for writing a program?
   There are so many formats that it would be impossible to describe them here. There are some similarities though. Basically each student should have a copy of the program in use. It should allow for choices to be made: "answer five of the seven questions"; "choose one of the following"; "with the media of your choice...", etc. It should ideally contain some kind of a pre-test and then a post-test so the learner knows, and you know, how much was or was not learned from the unit. All packets should have elements that even the most

reluctant learner would have a hard time turning down. Every unit should be overflowing with "let's do" activities—ones that the students do not just read about. Have them drawing, taping, taking pictures, constructing, narrating, etc.
Find a format that your students respond to and that you find easy to deal with. Here again, ask around to find out what formats have worked for others. The style and format of your personalized program will have a lot to do with its success so spend the time and find a style that fits both you and your students.

7. How do you maintain classroom control while all of these activities are going on?
In a large measure this will depend upon your definition of control. It would be unrealistic to think that your room will be absolutely quiet and orderly. If this is what you prefer, the open concept method of instruction for you. You can maintain reasonable order, while allowing freedom, by establishing firm guidelines with you. class as to behavior you all can agree is reasonable. Some call these room rules. Whatever you call them everyone will be much happier if there are definite guides as to what is considered appropriate and what is not. Most of this will depend on your teaching style, the age of the students, and the amount of self-discipline they already have. It is always better to articulate your expectations than to leave the students guessing what kind of a mood you are in that day. You will have to live with the situation and then decide what "feels right" for you. Here again, the key is to keep students involved and evaluating along with you. If you develop that team spirit early in the game, it will pay off many times later.

8. What if you do not "feel right" about letting the students walk around the room freely during math period?
This can be very common. Often there will be some who walk around only for the purpose of disturbing others. One system that was used to try to alleviate this problem was the flag system. The students remain in their seats except for correcting their math assignments. If the student needs the teacher for help on a problem or to conference, he puts a folded piece of colored paper on his desk, the flag. We used two colors, red for needing help and blue for needing a conference. There are other ways you can creatively solve the problem. The main requirement is that whatever you decide to do, make sure that it fits your teaching style.

9. Are the children then free to "do their own thing"?
The answer to this one is easy. NO. Giving children freedom does not mean that anything goes. Most teachers who personalize do set ground rules, some at business or class meetings and others arbitrarily. Usually the rules are few: return materials to the proper place, do not interfere with the work of other students, etc. Some basic rules are necessary and in fact most children feel more comfortable when there are rules and they are consistently maintained.

10. How do you keep all of this going?
Get your students involved in the planning. Get parents involved in helping out wherever possible. Get as many people into your classroom as you can. Your role in personalized instruction is to get the ball moving and then to pass it around as much as possible. Share the burden. Organize and enjoy the activities with the students. A learning packet may be completed by students in one day or it may be a project taking as much time as a month. In the case of the math program in this booklet the activities were designed to last for an entire school year.

11. How do you start a program going?
Follow your instincts. Keep excitement going for what you and the class are doing. Have the class feel as though this is something brand new and that they are on the threshold of a new discovery, Keep them thinking they are really revolutionaries in their own right. Once the students are excited and are finding success, you are off and running. In fact you will be trying to keep up from then on. You are keeping up, though, not because you "have to" but because you are excited with what the students are doing and you find their enthusiasm contagious and, sometimes even overwhelming.

12. What will you do with the student who does not seem willing to get the work done?
This problem will exist in most rooms (at least in the beginning of a program) and must be dealt with. One technique is to use what is called a structure sheet. On a ditto form, write out the assignments a student must finish that day (in other words, structure the daily program). The "what if he does not do it" clause differs with each child. The general pattern is that a well known consequence follows the not-doing. One that seems to work is to involve the parents.
Call the parents and the student into a conference

and discuss the problem. The parents are usually well aware of the problem and are more than ready to listen to any solution. At this point, show the parents the structure sheet and explain the mechanics of how you determine what should be done in a day. All should agree that the student must present the parents with the structure sheet the minute he comes in the door after school. (If the student forgets to take the sheet home, he is immediately told to go back to school and get it. This follow-through is essential.) It then becomes the parent's job to see that the work is completed before the child returns to school the next day.

Obviously the structure sheet is not the answer for every student. Some parents do not care whether their child completes the work; their "help" you can do without. When you know parents will not cooperate, withhold some school pleasure—recess, special room jobs, or whatever you can find that seems to work for that child. The problem of not getting work done is a real one and one that you need to work out a solution for in your mind. Like everything else, though, you must find a solution for each individual child. There is no one magic cure-all.

13. Any final words of caution?

Whatever programs you design, there are some basic questions to continue asking yourself. Do I have my learning objectives well in mind? Are the students learning or are they playing? Can every child find a large measure of success in what he is doing? Does my program feel good to me personally and professionally? Does the program fit my style? If I am using a program someone else has prepared, does it fit me and my class? Do I know my students and their needs?

Personalized or individualized instruction can be frustrating at times, but the rewards of this instructional method far outweigh the frustration. It forces you to know and really live with the students in your class. The key word in this type of program is involvement. Show your students that you care, that you know their needs. Give them a strong portion of success and then watch them take off.

INTRODUCING PERSONALIZED MATH

The aim of personalized instruction is that the students receive the same or similar instructional material, but the teacher arranges the environment to enable each student to proceed through the material at his own pace. Here in capsule form is what one can and cannot expect personalized instruction to be:

IT IS	IT IS NOT
1. variable sized instructional groups based on needs	1. always 1 to 1 or 1 to 30 teaching
2. variable expectations	2. expecting the same number and quality of responses from each student
3. allowing for students to monitor their own progress	3. totally teacher directed
4. variable rate of achievement	4. locked rate of achievement
5. immediate knowledge of results (self-correction of daily work)	5. group corrected; usually not teacher corrected
6. sometimes variable time allocation	6. locked time schedule
7. possible to allow for performance contracting	7. always allowing students to set their own aims

In starting a personalized program in math, it will be very important to have a skill assessment, teacher-made or commercial, for the four basic whole number operations including basic facts in each area as well as procedure checks.

The students must be totally introduced to the procedures that will be used in the classroom: where correction is done, who can help students, are working partners allowed, what are the daily routines, etc. The system you choose for organizing the room and the work to be completed will be one of the most important factors in the success or failure of your personalized program.

One of the most essential elements of your program will be the assignment guide you develop. It must include several components:

1. It must be self-directing. When the student has finished one assignment, he should be able to tell at a glance from the assignment sheet what his next task is.
2. There should be a record-keeping component. Where does the student record his score made on a page, dittо sheet, test, etc.? Be sure that each student understands and can use the record-keeping system in the initial phases of the program. Spend time introducing the record-keeping system and checking out each student on its use. This will save much valuable time later on.
3. The program must allow for alternatives for a child who does not master any section on the first time through the program and for a student who may have already mastered a section and therefore should bypass it. Although this component does not need to be specifically written into the program, the best plan is to prescribe the instruction that is needed for each individual at the time he needs it.

4. The criteria for successful completion of any section of the program needs to be well understood by the students. If the Diagnostic Test Booklet provided with the Houghton-Mifflin program is your evaluation tool at the end of a unit, tell the students exactly what the minimum acceptable percentage correct is.

Whenever any new type of program is introduced, the first exposure the students have will be crucial. Make sure that all phases of your program are planned and ready for use when you begin. The next most important phase, once the materials have been established, is the attitude you develop among the students. If you regard the program as just another way to keep them working and out of your hair, it will fail to defeat in less than a week. If, on the other hand, you regard it as a fun way to learn math and as a way that everyone can succeed and feel good about the job he is doing, the student's enthusiasm will carry the entire class over any rough spots you might encounter.

The personalized program in math is best started the first day of school. This does not mean to pass out the books and the assignment guide and dive into the work. It does mean getting to know the students in the class and their attitude toward math. If students have very negative feeling, it is best to go at math gently and perhaps use many warm-up games and "fun" math activities to demonstrate that it can be fun to work with numbers. It is worth spending two or three weeks on attitude development alone if the class has a strong negative feeling. If, on the other hand, the class seems excited about math and really ready to dive into your program, you can lessen the warm-up period and get into the formal program sooner.

Once the attitude seems to you to be positive and the students are ready to move into the program, you should begin some skill assessment. Be sure the students understand this is not a test situation (sink or swim), but that you would like an idea of their strengths and weaknesses so you can do a better job of making them a math program that will fit them properly. Here again, it is so important that the team spirit is established ("let's work together and help you really do your best job in math"). When team spirit between student and teacher is developed, the student rarely has the feeling he is a failure because he can always go to the teacher to find help or a new way to learn a particularly difficult concept. Your skill assessment should include the basic facts for each of the four basic operations (addition, subtraction, multiplication, and division, using as many as are appropriate for your grade level expectation) and an assessment of procedural competence in each area. The skill assessment should provide you with enough information so a proper placement can be made for each student.

Some will be ready to move right into your program and others might need to spend some time reviewing and refreshing the basic skill so they can be successful in the program on an independent level. There may even be some whose skills are so weak or so strong your program in no way fits their needs. In this case you will need to prepare or find materials that will meet their needs. Thus a thorough skill assessment early in the year can save much frustration or boredom for those special few. The program you have designed, or the one offered here as a guide, should fit most of your students.

The next phase is to begin having the students work into the program. Your method for doing this and the ground rules you set will vary with your teaching style and personality. Some things to consider are:

1. Who corrects daily work?
2. Where do students turn for help when they are stuck?
3. Who keeps records of progress?
4. What are the testing procedures at the end of a unit or section?
5. Where are supplies kept—answer books, test booklets, ditto sheets, etc.?
6. Does each child have an assignment guide or is it to be kept in chart form?
7. Is there a definite work period?
8. Is there a daily minimum amount of work required?
9. What will you do with the student who does not seem willing to get the work done?

Keeping track of each student's progress is essential and difficult unless you have an established procedure. One that seems to work for many is the student-teacher conference. On the attached sample guide sheet you will see areas marked CONFERENCE. When a child reaches this point in the program, he knows that he is to take his work completed since the last conference to the teacher. In a matter of a few minutes the teacher looks through the work and chats with the student about any difficulties and may, on occasion, give the student a few sample problems to make sure he understands the concepts that were presented in the section. The time needed for conferencing will vary according to needs and to the system you use. The conferences should be brief, but in the initial phases of the program you will want to check carefully that the student is understanding the mechanics of the program and is able to master the concepts.

So much of the program you develop will depend on your consistency and the atmosphere you set. You will have to judge if some extra motivator is needed to keep the students moving ahead. You will want some pace changers added to the program as you go along. In personalizing your instruction though, you should be keeping track of the pulse of your group and add any extras that may seem necessary to you. Never let the program bog down into

boredom. It can be easy to ask the students for their reaction to the program and let them suggest some of these pace changers. They can be a tremendous asset in making the program work. Always include them in planning. Always enlist their support in any changes you make.

Another important aspect of the program is the continuous evaluation. Do not make the mistake of doing an initial assessment and then forgetting it until the end of the year. Include check points on those basic skills frequently. Especially at the beginning of a unit requiring a basic skill, check the student on his current level. If the chapter is about multiplication, make sure the student knows all the basic facts and whatever procedure skills are pre-requisites to his being successful in the unit. Once you have assessed and reassessed the student's level, be sure to provide some instruction in weak areas before the section is attempted. You can avoid a lot of frustration if you increase the student's chance of success.

All of this advice probably makes it sound difficult to start a personalized program and keep it functioning. Once you begin, however, you will find the kinks seem to work out themselves and much of the work seems to come naturally. You will know when a student needs special help and you will know what adjustments need making. If there is one caution that seems advisable, it would be that you not launch into any program that does not fit you and your teaching style. The best program for the teacher next door may not be the best program for you or your group of students. Include the students on the planning phases, enlist their support, and create an environment of adventure and enjoyment.

BIBLIOGRAPHY

Blackie, John. **Inside the Primary School.** American ed; New York: Schocken Books, 1971.
(A good overview on English primary schools.)

Branan, Karen. **Ideas for Opening Up.** Scholastic Teacher, Jan. 1972. New York, Scholastic Magazines, 1972.

Divoky, Diane. **Inside the "Open Classroom".** Scholastic Teacher, Sept. 1970. New York, Scholastic Magazines, 1970.

Featherstone, Joseph. **Schools Where Children Learn.** New York: Liverright, 1971.
(Positive examples of more open developments in the United States.)

Hertzberg, Alvin and Edward Stone. **Schools Are For Children: An American Approach to the Open Classroom.** New York: Schocken Books, 1971.
(Describes positive benefits to be gained by children and teachers from open education. Also provides a guide for teachers who wish to open up their classrooms.)

Holt, John. **How Children Fail.** New York: Pitman, 1964.
(Describes the many ways in which initiative has been taken away from children. The educational message is clear.)

Kohl, Herbert. **The Open Classroom.** New York: Vintage, 1970.
(Encourages teachers to take small and rewarding steps toward increased openness.)

Perrone, Vito. **Open Education: Promise and Problems.** Bloomington, Indiana: The Phi Delta Kappa Educational Foundation, 1972.

MATH SKILLS ACHIEVEMENT

Content:	Complete	Comment:
Sets, Numbers, and Numerals		
Addition, Subtraction,		
Multiplication, Division		
Multiplication, Division		
Number Theory		
Fractional Numbers		
Multiplication and Division		
of Fractional Numbers		
Decimals, Per Cents		
Geometry and Graphing		

SKILLS TEST # 1 *MULTIPLICATION-DIVISION*

75% Accuracy = Mastery

Track 1.

4	5	9	4	8	6	7	3	7	6	8	6
x3	x6	x7	x8	x7	x9	x6	x9	x4	x8	x9	x3

9	M
12	NM

Track 2. $9\overline{)81}$ $8\overline{)72}$ $5\overline{)45}$ $7\overline{)49}$ $6\overline{)36}$ $4\overline{)32}$ $7\overline{)35}$ $3\overline{)27}$ $8\overline{)64}$

$9\overline{)18}$ $7\overline{)42}$ $6\overline{)54}$

9	M
12	NM

Track 3.

479	536	902	781	657	429	888	640
x8	x7	x5	x9	x7	x6	x4	x7

6	M
8	NM

Track 4. $9\overline{)643}$ $4\overline{)702}$ $7\overline{)504}$ $6\overline{)820}$ $8\overline{)436}$ $5\overline{)79}$ $9\overline{)828}$ $7\overline{)581}$

6	M
8	NM

Track 5.

5642	7040	1928	3456
x246	x895	x363	x704

1	M
4	NM

Track 6. $46\overline{)9490}$ $27\overline{)1987}$ $99\overline{)6481}$ $32\overline{)6464}$

3	M
4	NM

SKILLS TEST #2

SQUARES — SQUARE ROOTS

PRIME NUMBERS — FACTORING

G.C.F. — L.C.M.

75% Accuracy = Mastery

Track 1.	8	=	12	=	100	=	72	=
	10	=	25	=	55	=	39	=

6	M
8	NM

Track 2.	$\sqrt{25}$	=	$\sqrt{2116}$	=	$\sqrt{900}$	=	$\sqrt{1600}$	=
	$\sqrt{81}$	=	$\sqrt{196}$	=	$\sqrt{121}$	=	$\sqrt{225}$	=

6	M
8	NM

Track 3. Circle the prime numbers: 1 2 3 4 5 6 7

8 9 10 11 12 13 14 15 16 17 18

19 20 21 22 23 24 25 26 27 28 29

30 31 32 33 34 35 36 37 38 39 40

41 42 43 44 45 46 47 48 49 50

12	M
16	NM

Track 4. Find the prime factors:

36=

48=

54=

35=

75=

16=

100=

18=

Track 5. Find G.C.F. (Greatest Common Factor)

10	24	45	42
=	=	=	=
5	36	27	98

3	M
4	NM

Track 6. Find L.M.C. (Lowest Common Multiple)

7	14	5	1
=	=	=	=
10	21	8	9

3	M
4	NM

SKILLS TEST #3 — *FRACTIONS*

Track 1.

1/3 x 12 = ____	4 x 8 = ____	1/5 x 15 = ____	
12 ÷ 3 = ____	8 ÷ 4 = ____	15 ÷ 5 = ____	7 M
12/3 = ____	8/4 = ____	15/5 = ____	9 NM

Track 2.

10/15 = ____	8/10 = ____	6/12 = ____	9/27 = ____	6 M
12/18 = ____	5/25 = ____	10/30 = ____	8/16 = ____	8 NM

Track 3. 3/4 ◯ 8/12 5/7 ◯ 16/21 8/9 ◯ 17/18 7/8 ◯ 13/16

3 M
4 NM

Track 4.

1/3	2/5	1/2	1/4	1/6	5/12
+3/4	+1/6	+1/3	+2/5	+3/6	+5/12

5 M
6 NM

Track 5.

5/7	7/8	1/2	7/8	2/3	3/4
−1/7	−1/8	−1/3	−3/4	−2/7	−5/12

5 M
6 NM

Track 6.

3 3/4	5 6/7	6 2/3	6 4/5
+2 3/4	+2 3/7	+3 1/6	+1 3/10

3 M
4 NM

Track 7.

8 3/5	7 3/4	4 1/2	9 1/3
−2 4/5	−2 3/8	−3 4/5	−7 2/3

3 M
4 NM

CLOVER PARK SCHOOL DISTRICT #400
Lakewood Center, Washington 98499
September, 1971

Title III, ESEA

COMPUTATIONAL ASSESSMENT

NAME _____ M F AGE _____

SCHOOL _____ GRADE _____ TEACHER _____ DATE _____

ITEM	RESULTS	SUGGESTED PROGRAM
A. Random Number Rate		
B. Oral Rote Counting 1-50		
1. Ones 1-100		
2. Twos 100-110		
3. Fives		
4. Tens		
C. Sets		
1. Recognition of how many		
2. Matching like sets		
3. Set construction		
D. Numeral Recognition		
1. Oral		
2. Written		
E. Number Words		
1. 1-10		
2. 11-20		
F. Addition		
1. Facts		
a. 0-10		
b. 11-18		
2. Procedures		
G. Subtraction		
1. Facts		
a. 0-9		
b. 10-18		
2. Procedures		
H. Multiplication		
1. Facts		
2. Procedures		
I. Division		
1. Facts		
2. Procedures		
J. Fractions		

NOTE: Numerals in parentheses following the main headings indicate grade level and objective number from the 1971 district math objectives. Example: (III-4) means Grade III, objective Number 4.

ORAL ROTE COUNTING

1. Have the child count by ones as far as he can, stopping at 100. Note the errors. (I-9, II-5, III-5.)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34
35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51
52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68
69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85
86	87	88	89	90	91	92	93	94	95	96	97	98	99	100		

2. Have the child count by twos as far as he can, stopping at 100. Circle the errors. (II-7, III-5.)

2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34
36	38	40	42	44	46	48	50	52	54	56	58	60	62	64	66	68
70	72	74	76	78	80	82	84	86	88	90	92	94	96	98	100	

3. Have the child count by fives as far as he can, stopping at 100. Circle the errors. (II-32, III-5.)

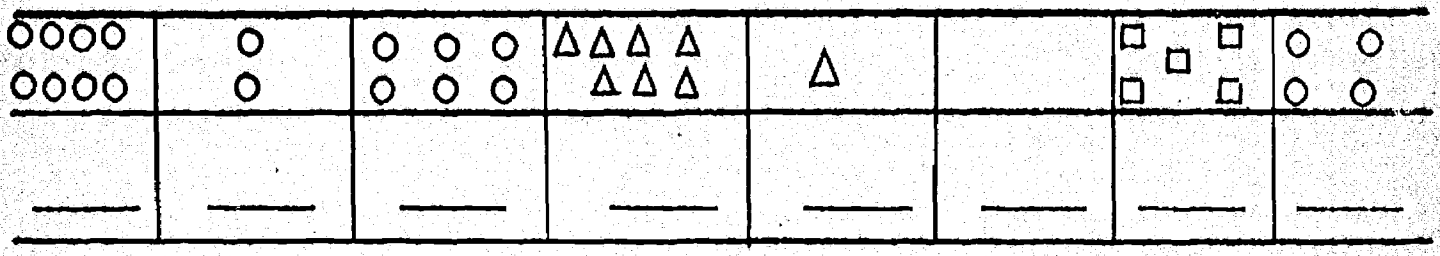
5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85
90	95	100														

4. Have the child count by tens as far as he can, stopping at 100. Circle the errors. (I-10, II-6, III-5.)

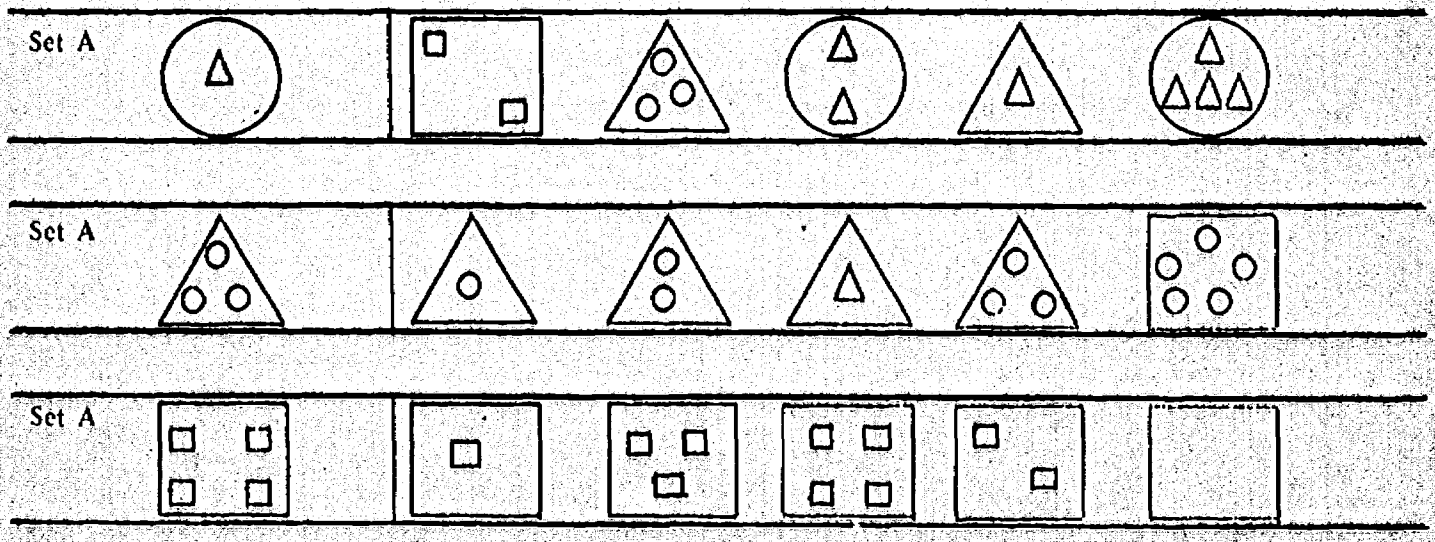
10	20	30	40	50	60	70	80	90	100

SET ASSESSMENT

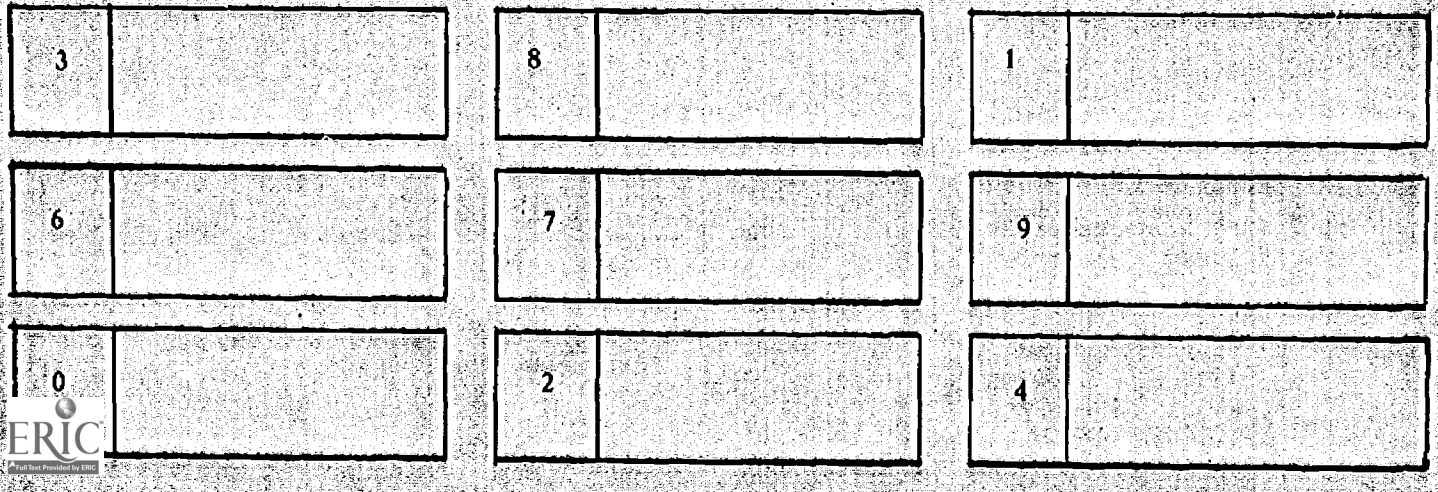
1. How many are there in each set? Count each set and write your answer on the line in the box below the set. (1-6.)



2. Match Set A by circling the identical set to its right. (1-4.)



3. Set Construction — Draw a set beside each numeral.



NUMERAL RECOGNITION

1. Have the child orally name each numeral. Circle errors. (I-2, II-29, III-1.)

7	9	25	8	16
2	4	5	15	22
1	21	11	10	20
6	17	23	18	24
13	3	14	12	19
34	57	49	92	65

2. Written numeral recognition (I-9, II-5, III-5.)

A. Write by 1's to 10: (I-9, II-5, III-5.)

B. Write by 2's to 50: (I-29, II-7, III-5.)

C. Write by fives to 100: (I-30, II-32, III-5.)

D. Write by tens to 100: (I-11, II-6, II-5.)

3. NUMBER WORDS — Write the numeral after each number word (I-27, II-2, III-2.)

one	three	five	seven	nine
two	four	six	eight	ten
eleven	twelve	thirteen	fourteen	fifteen
sixteen	seventeen	eighteen	nineteen	twenty

[illegible] AACD CURRICULUM BULLETIN

P.O. BOX 421 SALEM, OR 97308

PRICE LIST

APRIL, 1974

1973

[illegible]

1972

[illegible]

1971

[illegible]

OREGON ASCD CURRICULUM BULLETIN
P.O. BOX 421
SALEM, OREGON 97308

MANUSCRIPTS SOLICITED. SHOULD TREAT A SINGLE TOPIC AS A MONOGRAPH OR STUDY GUIDE. SUBMIT TWO COPIES OF CURRICULUM, 10 TO 15 DOUBLE SPACED TYPED PAGES TO EDITOR (P.O. BOX 421, SALEM, OREGON 97308).